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# Pulp and Paper Magazine

## OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., July 1, 1920.

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### TABLE OF CONTENTS

**Editorial:—**

Dominion Day .....	689
Discarding the forest .....	689
A delicate monster .....	689
Cobwebs .....	690

**Special Articles:—**

The summer meeting of the Technical Section .....	691
Paper box makers met at Quebec .....	695
The experimental pulp and paper laboratory concluded .....	699



**News of the Industry:—**

British trade news .....	702
Pulp and paper news .....	703
Canadian trade conditions .....	704
New York markets .....	704

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J. NEWELL STEPHENSON, M.S., Editor.

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# FAIRBANKS-MORSE

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THE craftsman of a generation ago is the skilled operative of today. Intensive wants, competition, invention have begotten intensive methods. Everything has changed—everything except the demand for quality. And today quality must unite with economy if the result is to be successful.

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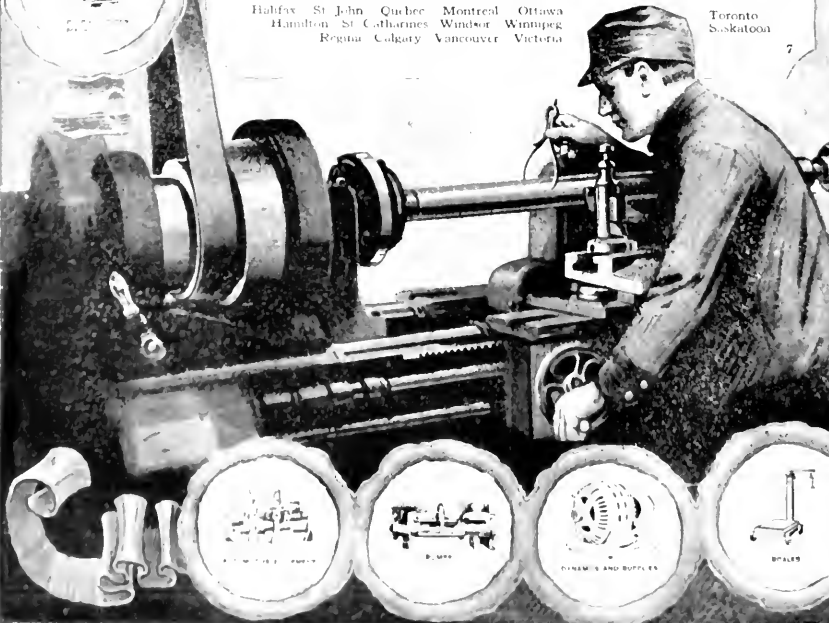
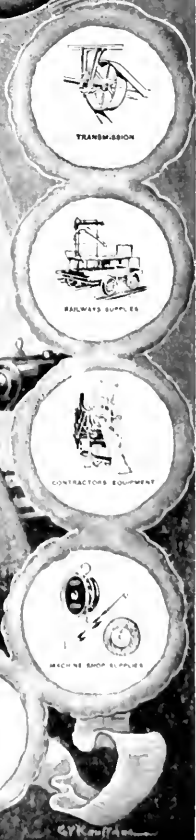
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G.V. Crawford



# EDITORIAL



## *DOMINION DAY.*

Patriotism is largely reverence of memories. The nation that fails to remember the noble men and the good deeds of its people is sure to fade. What better anniversary is there to celebrate than the birthday of the Dominion? For more than half a century Canada has been developing to nationhood and is already an important factor in supplying the world with food, mineral products and manufactured articles. While Canada is but an infant in the family of nations, the chances are exceedingly good for sturdy development and a successful future. Nature has been lavish in the endowment of great natural resources and the invigorating climate and inspiring opportunities have combined to bring out the best in a self-reliant, progressive people.

The fifty years since Confederation are but a beginning. The future is what we make it. The past predicts sanity, surety and success.

## *DISCARDING THE FOREST.*

If the U. S. Senate believe all the talk that is forthcoming from its honorable members and spread on the records of that august body, it will certainly have a lot of nonsense. The statements have been made that the paper manufacturers are not interested in other sources of fibre than the tree and that nothing but spruce is considered worthy of their attention. Both of these statements can be seriously questioned. Because much of what is done in the research laboratory of the mill is not published is no indication that certain subjects have not been seriously considered and in some cases perhaps worked out to a negative conclusion and dropped. It is certainly untrue that spruce is the only wood considered by the paper mill and as large quantities of other trees are even now in successful use in paper mills the research of these manufacturers has resulted in success and in the use of even the weeds of the forest, the birch, maple and beech which it has been found possible to use and which have been used in the manufacture of newsprint paper. In the manufacture of other grades of paper a vast amount of work has been done and important results have been obtained and put to practical use. It is hardly to be expected that a publisher would know all about the investigations made in connection with another industry but it would seem advisable for people making public statements to be a bit careful of their ground.

The appropriation of \$250,000 for the investigation

of other sources of fibre supply would certainly be welcome to the paper manufacturers. That is the kind of activity they have desired for many years. It would relieve them of investing money that could be otherwise very well expended instead of carrying on individual researches. The provision for such an expenditure will be a big step forward in the conservation of the north American forest and the work on the problem cannot be started any too soon. There is an urgent need for the development of other sources of fibre and while we believe that the tree is the best source of paper making material for most grades of paper there is room for investigation of the subject. The result will doubtless be the discovery of methods for raising and using annual crop plants for some grades of paper and that emphasis will be centered on recommendations which foresters have made for many years and that steps will be taken for the commercial raising of pulpwood crops.

## *A DELICATE MONSTER.*

The Editor had an interesting chat with a gentleman at the Banquet of the American Paper and Pulp Association regarding the building of successful paper machines. Our friend mentioned the early machines put out by some European, as well as by early American builders, as being delivered with the distinct expectation that it would require several months of operation before they would be in a condition to make good paper successfully. The reason for this was found in the lack of accuracy in the machining of bearings and other parts so that rather extensive operation was necessary in order to wear ribbing surfaces to a fit. It was usually necessary also to make a number of adjustments, even sometimes to the making of new parts. The success of the successful paper machine manufacturer was credited to the skill of the workmen and their sense of accuracy. The difference between the appreciation on the part of a workman that when a blueprint calls for a three inch journal, it must be three inches within a thousandth of an inch or less, and not anywhere up to a sixteenth of an inch out of the way, spells the reason.

Our friend mentioned in particular the Bagley-Sewall Company and recalled that when this concern began building their first paper machine some people thought the care and accuracy that they were putting on this job was quite unnecessary. The workmen in that plant had been making machine tools and their language was ten thousandths of an inch, a refinement

entirely foreign to the workmen in some other shops that had not so successfully built paper machinery. The result was that the first machine turned out was set up in the paper mill and the first roll made on the machine was a saleable product.

The size of a paper machine is likely to lead the casual observer to consider it rather crude but as a matter of fact it is one of the most delicate and careful articulated machines in use at the present time, especially when the size and weight are taken into consideration. For one who appreciates a nice job of engineering and construction, it is a source of pleasure just to stand in the machine room and watch one of these 200-inch modern monsters turning out perfect paper by the acre. Back of this wonderful accomplishment of our day stands the knowledge, the imagination and the courage of the designing engineer, the careful selection of the highest class of materials and the training and skill of workmen who appreciate refinements of measuring that are not foreign even to the watchmaker. The machinists and mechanics of the paper machinery plant have frequently spent a life time doing their particular part in the manufacture of the paper machine and take the greatest pride in the perfection of their work. It would take years for a plant making rougher equipment to be trained to the degree of carefulness necessary to make successfully a paper machine.

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#### COBWEBS.

The correct definition of "some hike" is the inspection of the Algoma Steel Company's works.

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We almost made a bad break by referring to the Mayor of Ste. Sault Marie as an enthusiastic "Soo-er."

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Exports of newsprint from the United States decreased from 8,291 tons in April 1919 to 3,068 tons in April 1920.

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It is a good sign of the times that an official of the Papermakers' Brotherhood attended the meeting of the Technical Section. We hope the example will be frequently followed.

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It may not have been due to the absence of the editor at the Technical Section meeting, but the fact remains that an important line was omitted from our last issue. The interesting article on "Analysis of Limestone for Bi-Sulphite Liquor" should have been credited to W. E. Byron Baker, of York Haven, Pa.

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It has been said that Canadian paper makers have American publishers by the thumbs, yet the Federal Trade Commission reports the weighted average price

of \$4,673 for U. S. mills and \$4,457 for Canadian. The figures are based on contracts involving 500,000 and 300,000 tons, respectively, of undelivered paper. No one can call this profiteering, even though a small tonnage was sold at an average of \$9.905 per 100 pounds.

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The intimation that the newsprint production in the United States is curtailed is absolutely refuted by the figures of the Federal Trade Commission. The production of total newsprint paper for May was 19 per cent. in excess of the average for the previous three year period and for standard news the increase was 22 per cent. Normal production, based on the average mentioned, was 108,400 tons. The mills actually turned out 129,230 tons.

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It has been proposed that Congress appropriate two hundred thousand dollars for the study of new sources of material for the manufacture of paper. The United States already has a well equipped laboratory with an efficient staff for this very purpose in the Forest Products Laboratory at Madison, Wis. The laboratory is always handicapped for lack of funds and it would seem better business to increase the appropriation to a working organization rather than to start something new along the same line.

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It is reported on good authority that one train on the Transcontinental Railway in one day started 27 fires. We have heard before of temporarily demented people burning money and much has been said of the extravagance of governments. It seems that an occasion like this calls for an expression of public opinion on such an unfortunate destruction of public property. The fact that Crown lands are leased is not an indication of no loss of revenue to the people since the revenue is derived from the cutting of timber rather than from the leasing of the lands.

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C. P. R. courtesy is a well-known characteristic of that great organization. The attention the officials of the Sudbury division gave the Technical Section, however, went beyond the bounds of official duty and made the paper men feel that they were the personal guests of the railroad. Divisional Superintendent Wilson had his car attached to the technical men's special sleeper and he, with Messrs. Bowen and Tremblay were most agreeable and solicitous for the welfare of the visitors. Needless to say, their kindness was greatly appreciated and the pleasant chats with these men certainly resulted in happy acquaintanceship and new friends for the great railway. The service throughout the trip was perfect and the rather complicated arrangements went through without a hitch.

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Holidays are welcome, but they raise hob with a publisher's schedule.



# The Summer Meeting of the Technical Section

Readers of the Pulp & Paper Magazine may be growing a little tired of reading that each meeting of the Technical Section of the Canadian Pulp & Paper Association was the best and most successful ever held. In spite of its frequent use, the expression, however, still holds good and truly, though inadequately, expresses the opinion of those who had the privilege of attending the summer meeting that was held last week. Members of the section were guests of the Spanish River Pulp & Paper Mills, Ltd., and were also entertained by the International Nickel Company to their smelting plant at Copper Cliff, Ontario, and the Algoma Steel Corporation at the Soo.

The members gathered Monday in Montreal and left in a special car on the evening train. It was a congenial party of friends who have been working together for a number of years in building up the Section and improving the industry. A number of others were picked up along the line, so that when the train left North Bay with the addition of the contingent from Iroquois Falls, there were just forty in the party. The Spanish River Mills, represented by L. H. Shipman, chairman of the Technical Section and assistant to the general manager of the company, took charge of the party at Sudbury. Mr. Shipman directed affairs from then on, and the success of the meeting is largely due to his attention to detail and careful arrangements, ably assisted and carried out by many willing assistants.

Before arriving at Sault Ste. Marie, an assistant boarded the train and distributed pictorial souvenirs of the visit. This beautiful interesting booklet begins with the following verses from Hiawatha, which are typical of the source of supply of the raw material on which the Spanish River Pulp & Paper Mills base their activities.

"Should you ask me whence these stories,  
Whence these legends and traditions,  
With the odour of the forest,  
With the dew and damp of meadows,  
With the curling smoke of wigwams,  
With the rushing of great rivers,  
I should answer, I should tell you,  
From the forests and the prairies,  
From the great lakes of the Northland,  
From the land of the Ojibways."

—Hiawatha.

The booklet includes interesting pictures of the mills of the company, the Algoma Steel Plant, the First Lock (restored) on the falls of the St. Mary's River which was built by the Northwest Fur Company in 1797. There are also a number of interesting pictures of the locks and of vessels at this great inland water way. A few of the interesting items from the souvenir are as follows:—

## "THE SOO."

The early days of Sault Ste. Marie are rich in the lore of a past that is slipping from us far too quickly. The country surrounding the present city was the scene of many an interesting tale of the life of Red Men. The Sault Ste. Marie Indians were of the Algonquin stock, the most numerous of Indian tribes.

Where they came from we do not know. For over three hundred years the white man has known of their existence around St. Mary's Rapids, but statements made by the Indians themselves lead us back into a very obscure past. The legend tells of red men living by a great ocean to the west. They were fighters and hunters of the sturdiest type.

But Sault Ste. Marie was not always the name of this locality. As the waters tumbled down over the rapids, through the narrow straits, the braves gathered together on the shores murmured to each other "Baw-a-teeg," which was the word used in speaking of the phenomenon. When speaking of the place it was called "Baw-a-ting." The generations who lived and died in Baw-a-ting spent their time in hunting, fighting, fishing and feasting. From the earliest time the



COL. C. H. L. JONES,  
General Manager, Spanish River Pulp & Paper Mills, Ltd.

tribe around St. Mary's River was known as the Ojibway tribe. The totem of the Sault Indians was the crane.

Until the time of the American Revolution there was no thought of dividing the history of the two shores of the St. Mary's River. Whatever happened on either side entered into the tale of the St. Mary's country. Voyageurs travelling up to Lake Superior portaged impartially on the north and south shores of the falls.

Just when the first white man set foot in St. Mary's country is not known, but in 1668 a small white settlement of between twenty and twenty-five voyageurs had been formed. Space does not permit an outline of the years which have intervened, but suffice it to say that they have been crowded full of tradition and history well worth reading.

The growth of the Sault has been steady since 1901, when the population numbered 7,169; in 1911 it had increased to 10,984 and in 1920 it has an estimated population of 22,000.

Sault Ste. Marie is the home of the Algoma Steel Corporation, which employs 3,500 men, and is one of the largest industrial concerns in Canada. In 1901 the walls of the first building of the steel rail mill



The Sault Mill.

were built, and in March, 1902, the first rail was rolled. The new \$7,000,000 addition to the Steel Plant, which is in course of erection, will have a yearly output of 150,000 tons of steel.

With the new addition the mill will have a total output of about 400,000 tons annually of rails and structural steel.

**The Spanish River Pulp and Paper Mills, Limited.**

The General Offices of the Spanish River Pulp and Paper Mills, Limited, are at Sault Ste. Marie. The three mills of the Company are located at Sault Ste. Marie, in the District of Algoma; at Espanola, in the District of Sudbury; and at Sturgeon Falls, in the District of Nipissing.

The Sault mill is the largest of the three operated by the Company, employing 800 men. The mill commenced operations in 1911, being at one time part of the Lake Superior Corporation.

Espanola is a modern industrial community, inhabited almost entirely by employees and their families, who number about 2,500. The town has a fine hotel, a community hall and two up-to-date schools; also a hospital, a fully equipped athletic park with a baseball field, football field, tennis courts, skating rink, curling rinks, dancing pavilion and refreshment booths. There are three churches in the community.

The following are a few facts regarding the equipment and output of the three mills:—

**PAPER MILLS:**

- Sault Ste. Marie
  - 2 156" Black and Clawson Machines; 1—186" and 1—198" Pusey and Jones Machines.
- Espanola
  - 2 120" Rice, Barton and Fales Machines; 2 161" and 2 166" Pusey and Jones Machines.
- Sturgeon Falls
  - 2 120" Bagley and Sewall Machines; and 1 166" Pusey and Jones Machine (now being installed).
- Sault Ste. Marie
  - Daily Normal Production, 225 tons; Annual Normal Production 70,000.
- Espanola
  - Daily Normal Production, 280 tons; Annual Normal Production 87,000.
- Sturgeon Falls
  - Daily Normal Production, 75 tons (2 machines); 130 tons (3 machines); Annual Normal Production 40,000 tons (3 machines).

**SLIPWHITE MILLS.**

- Sault Ste. Marie
  - Digesters, Four 17' x 54'. Daily Normal Production, 130 tons; Yearly Normal Production, 40,000 tons.

**Sturgeon Falls—**

Digesters, Two—16' x 54'; Daily Normal Production, 60 tons; Yearly Normal Production, 18,500 tons.

The equipment for making acid at the Sault consists of a Jessen four-tower limestone system. The Sturgeon Falls mill is equipped with the Barker Milk of Lime system.

**GROUNDWOOD MILLS.**

**Sault—**

Number of grinders operated by water—3-pocket, 16; 4-pocket, 8; Number of grinders operated by electricity, 6; Average daily production 175 tons; Water head on wheels, 18 ft.

**Espanola—**

Number of grinders operated by water—3-pocket, 29; Average daily production, 200 tons; Water head on wheels, 63 feet.

**Sturgeon**

Number grinders operated by water—3-pocket, 21; Average daily production, 130 tons; Water head on wheels, 36 feet.

**WOOD ROOMS.**

	Sault, Espanola, Sturgeon.		
Knife barkers . . . . .	2	..	11
Drum barkers . . . . .	9	3	3
Chippers . . . . .	3	..	2

**SLASHER MILLS.**

	Sault, Espanola, Sturgeon.		
Average number cords sawn daily (summer months) . . .	1,000	500	600
Total number cords wood used annually. . . . .	130,000	65,000	75,000

**BOARD MILL.**

Sault Ste. Marie One 100" Black & Clawson 4 cylinder machine.  
Daily normal production, 35 tons.



The Head Office, where the Business Meeting was held.



The Espanola Mill.



## BOILER PLANTS.

	Sault.	Espanola.	Sturgeon.
Number of Boilers.....	14	10	10
Total Capacity B.H.P....	7,000	2,900	2,900

## ELECTRIC POWER.

At Sault Ste. Marie the electric power necessary to operate the Sault Mill is generated by the Great Lakes Power Company in their power house adjoining the Sault mill, where 35,000 h.p. is developed, and an additional 8,000 h.p. will be developed on completion of a new addition now under construction.

At Espanola and Sturgeon Falls the company generates its own electric power, 6,500 h.p. at Espanola and 3,500 h.p. at Sturgeon Falls.

## St. Mary's Locks and Canals.

The St. Mary's Rapids are about half a mile wide and three-quarters of a mile long. The fall ranges from 17 to 21 feet with the varying stages of water.

The first canal was built on the Canadian side of the river by the North-West Fur Company in 1797. The lock was 38 ft. long, 8 ft. 9 ins. wide with a lift of 9 feet. It is still preserved as a historic relic on the grounds adjoining the general offices of the paper company.

The Canadian canal is one and one-eighth miles long, 150 feet wide and 23 ft. deep, with a lock 900 feet long and 60 feet wide, having 22 feet of water on the sills. It was built during 1888-95.

On the American side there are four locks. The Weitzel lock, 515 feet long and 80 feet wide, with 17 feet of water, was completed in 1881. The Poe Lock is 800 feet long, 100 feet wide and has 22 feet of water on the sills. It was built in the years 1887-1896. The third and fourth locks, 1,350 feet long and 80 feet wide, with 24½ feet of water, were opened to traffic in 1914 and 1919 respectively, taking six years to build.



The Old Block House at Sault Ste. Marie

The American locks are filled or emptied in about nine minutes and the gates opened in 1½ minutes. The Canadian lock can be operated in about ten minutes. Electricity generated by water power is used for operating the Canadian and the third and fourth American locks, the other two locks being operated by hydraulic power.

Each member was given a distinguishing tag of most ingenious construction. The back was a small circular disk of spruce to which was tied by ribbon a disk of groundwood pulp, another of sulphite pulp and a sample of newsprint made by the combination of the two. On top of this was a picture of the Soo mills which was an actual photograph. Details like this were evidence of the thoughtfulness of the company throughout the trip.

## Seeing the Soo.

The train arrived only ten minutes late after its journey of more than 600 miles and autos were waiting to take the guests to city hotels for dinner. Garments were left in the car which was switched on a siding to be used as sleeping quarters. The party was met at the Soo by a contingent from Toronto which had arrived a few hours before.

After dinner, which gave opportunity for easterners to become acquainted with the far-famed Lake Superior trout and white fish, the automobile squad again appeared and took the visitors around the city and up on the ridge from which a wonderful panorama can be seen. Great surprise was expressed at the size of the Soo and the wonderful view of the locks and river. A beautiful sun set was also provided by the committee (at least they didn't deny it).

According to schedule the party was left at the community Hall over the general offices at 9 o'clock and there were entertained by the very interesting film showing all the operations of manufacturing newsprint paper from the carrying in of supplies and building roads to the lumber camps, through the logging and driving operations and the manufacturing processes to the finished product, being shipped out by the train load.

On Wednesday morning the section gathered again in the hall for a business session and listened to interesting papers by Howard S. Taylor, of the Management Engineering and Development Company of Dayton, Ohio, on "Gypsum Roof's for Paper Mills" and one by Dr. R. H. McKee of Columbia University on "Waste Sulphite Liquor Utilization." The papers were well discussed and thoroughly enjoyed. The business meeting brought up a number of interesting and important points, the one arousing the greatest interest being the discussion of the situation on the forest products laboratories. The minutes of the meeting are not yet available but will be published in an early issue as will also the papers.

Reports were heard from various standing committees and accepted by the meeting.

Telegrams of regret at their inability to be present were read from Dr. J. S. Bates, Mr. George H. Mead, Mr. John Stadler and Mr. C. B. Thorne.

Lunch was served in the company's cafeteria, after which competent guides conducted parties of the visitors through the extensive plant and those who wished were taken by automobile to the plant of the Algoma Steel Company. About twenty went. It was a full afternoon for all. Few members realized the extent of the steel industry in Canada and were greatly interested in the extensive plant, from blast furnaces to rolling mill, including a complete by-product coke plant.

The tired trampers were taken aboard to steamer "Premier" at five o'clock and treated to a trip up the Canadian locks and down the American side. Nature decided to take a hand in the entertainment of the party by arranging a shower which resulted in a beautiful double rainbow that made an arch over the end of the locks and under which it seemed necessary for the boat to pass in steaming to the dock.

Again on shore, a fleet of automobiles conducted the section, now considerably augmented by recruits from the Spanish River forces, to the Country Club where an excellent banquet was arranged. Here again the photographer was in evidence with an attractive photographic print on each menu. After partaking of the bountiful dinner, Col. C. H. L. Jones, general manager of the company presented what the local paper announced would be a formal address. Perhaps the Colonel can make a formal address, but he assured the gathering he wouldn't, although in his excellent remarks he certainly gave the members something to think about.

After the toast to the King, Major Farquhar was introduced by the toast master. He extended a warm welcome to the visitors, incidentally telling them something of the city.

Col. Jones called on Mr. L. H. Shipman for a formal speech, but got from the Chairman of the Technical Section a response of appreciation on behalf of this section and some announcements regarding the program, which Mr. Shipman said was his principal business.

The toastmaster had better luck next time. Mr. George Carruthers was called on, and, as usual, came through with some interesting remarks.

Every one enjoyed the instructive talk of Judge Stone, the senior Judge of Algoma district. He told many interesting things about the history, traditions, extent and resources of his district, which covers well-nigh the western half of Ontario.

A number of American friends were present and their appreciation was eloquently expressed by Mr. T. J. Keenan, Secretary of the Technical Association of the Pulp and Paper Industry, whose name was included when a toast was drunk to the President of the United States.

The Canadian Pacific was represented at the banquet, and Mr. Wilson, division superintendent, made a few remarks.

Back to the cars," was the word that came all too soon, and the party piled into the autos once more. Special arrangements had been made to get the private cars to Espanola, which was reached in time for breakfast. Here the visitors were received by Major P. B. Wilson, and all proceeded to the new Commun-

ity Hall, where tables were spread. Major Wilson welcomed the members of the Section and invited them to inspect the mills.

About two hours were spent in this interesting plant and about the town. One who had visited the place only three years ago, noticed much growth and many improvements. The town has grown rapidly, both in size and attractiveness. Much new machinery, including two paper machines, has been installed, and further extension is still under way.

### COPPER CLIFF.

A special engine was provided to take the party to Copper Cliff, near Sudbury, which was reached in time for lunch at the Club House. The International Nickel Company, ably represented by Mr. Collins, the general manager, entertained the Section with an excellent luncheon. The Club House is very complete and attractive, a statement that will certainly be approved by the member who accidentally opened the door to the swimming pool—it happened to be the ladies' hour.

At this extensive plant of the I.N.C. the ore, containing about 1.5 per cent copper and 3.5 per cent nickel, is received from the mines nearby and reduced in two stages to a matte containing about 80 per cent of the metals and 20 per cent of sulphur. This is shipped to Bayonne, N.J., to be refined and separated, or made into Monel metal.

The first smelting is done in blast furnaces and the second in converters of the Bessemer type. A battery of Wedge burners takes care of the flue dust and fine ore. Huge air compressors supply the enormous volumes of air required by the furnaces, which consume many times more air than ore.

The smelting of the ore is of particular interest to paper men because several hundred tons of sulphur go up the flue every day. The concentration of sulphur dioxide in the gas from the blast furnaces is only about .55 per cent, but from the Wedge furnaces is about .48 per cent and in the converters is from 10 to 12 per cent. It is economically and commercially possible to condense the SO<sub>2</sub> to liquid form and ship in tank cars to pulp mills. This is done in Washington, where the Camas mill of the Crown-Willamette Co. gets sulphur in this form from the Tacoma smelter. A conference was held to discuss the matter, and it developed that the railroad misunderstands the nature of the material and is asking a prohibitive freight rate, apparently based on explosives. Mr. Rawlins and Mr. Rogers, of the Nickel Company are keen to do something about using this waste product, and if a satisfactory rate can be arranged it is quite probable that some Canadian pulp mills will be able to have a Canadian source of sulphur supply. A description of the method of handling the liquid SO<sub>2</sub> at the Camas mill was published in the Pulp and Paper Magazine, Dec. 18, 1919, page 1091.

It was a tired, but satisfied, party that climbed back on the cars, which were hauled into Sudbury to be attached to the evening train for the East. Here the Toronto contingent left the party. When the journey was resumed, hearty appetites did justice to the contents of the C.P.R. diner and groups of friends, some new, some old, could be seen in earnest discussion of features of the trip or matters of mutual interest. Montreal was reached on schedule time, and those who had not left at stations along the way shook hands again, and agreed they would not have missed the trip for anything.

## Paper Box Makers met at Quebec

The annual convention of the Canadian Paper Box Manufacturers' Association held at the Chateau Frontenac, Quebec, on June 21st and 22nd, attracted a large number of representative men in the industry in Canada, and at the conclusion of session replete with addresses and discussions on matters pertaining to the box board trade the convention was voted the best yet held. Practically all of the mills were represented and an excellent spirit of co-operation prevailed throughout the gathering. Sixty delegates were welcomed to Quebec by Sir William Price of Price Bros. and Co., Limited.

One of the resolutions passed authorized the President to appoint a committee to take up with the Canadian Railway Association the granting of a commodity freight rate to St. John, N. B. and to obtain the co-operation of the board mills to this end.

Among the addresses and papers which were given and on which discussion took place were the following: "How Montreal is Solving the Cost Problem" by C. N. Moisan; "The Problems of the Metropolitan Paper Box Manufacturers' Association" by H. E. Roden of New York; "Popularizing the Cardboard Carton," by Charles P. Wellman of the National Packing Machinery Co., of Boston; "Demonstration of Costs of a Men's Shoe Box" by F. W. Fisher, of F. W. Fisher and Co., Ltd.

Mr. D. H. McDermid, of the Somerville Paper Box Co. Limited, addressed the Convention, the subject of his remarks being the utilization of the Association as an instrument to increase the efficiency of the members in conducting their factories.

It was resolved that the Advisory Committee is authorized to appoint a Committee to investigate and report upon efficiency, industrial relations, and cost standardization work, the Advisory Committee also being empowered to much such special assessments on members through the secretary, as they may deem necessary, to defray any outlay, which will be required to carry out this work.

Mr. L. J. Adjutor Amyot of the Quebec Paper Box Co., addressed the Convention, his subject being "Entente Cordiale between Ontario and Quebec."

Mr. J. B. Lawrason of the Lawrason-Doughty Co. of Toronto, gave a demonstration of costs of a folding box, also giving demonstration of how hour costs are arrived at.

The chairman reported the following recommendation of the Nominating Committee, as to officers, for the ensuing year:—

President:—C. T. Reid, Chas. Reid and Co., Hamilton.

Vice-President:—C. N. Moisan, Standard Paper Box Co., Ltd., Montreal.

Secretary-Treasurer:—S. J. Frame, Toronto.

Advisory Committee:—J. B. Lawrason, Lawrason-Doughty Co., Toronto; J. H. Lefebvre, King Paper Box Co., Montreal; B. Sproule, Collett-Sproule Ltd., Toronto; W. P. Bennett, Rudd Paper Box Co., Ltd., Toronto.

Among the resolutions adopted were the following: That the Secretary be instructed to convey to Messrs. Price Brothers and Company, Limited, the hearty thanks of the Association for the royal hospitality extended to it during the Convention by that Corporation, and also for the great courtesy and kindness of Sir

William Price, Col. Ray and Mr. F. R. Thorn.

That the Secretary convey to the manager of the Chateau Frontenac, the thanks of the Assn. for the fine service furnished by the hotel during the Convention.

That a hearty vote of thanks is hereby tendered to the respective speakers who have contributed to the program of the Convention.

That a hearty vote of thanks is hereby tendered to the retiring officers of the Association.

It was decided to hold the next annual convention in Hamilton, Ontario.

### THE IDEAS OF THE PAPER BOX MANUFACTURERS.\*

By W. P. BENNETT, Toronto.

I count it as one of the privileges of my life to have resided for some two years in the province of Quebec. During that period it was my good fortune to visit this historic city a number of times. It goes without saying that I soon felt at home here, and learned quickly to love and appreciate the simple homely courtesy of the people with whom I became acquainted. I therefore feel quite within my rights this morning in extending a hearty welcome from Old Quebec to those who have the privilege of being here.

The members who attended our Convention last year will doubtless remember the discomfiture of one of our members, who had for many days had been boasting of his big family until he was counted out by our good friend M. whose record puts Bill (not to mention any names) in the shade. I was reminded at the time of the experience of a Montreal friend of mine, who, when the following incident occurred was a man of 45 and had one son 12 years old.

He was travelling one day with a customer and wife who had a family of 13, of whom they were justly proud. Madame X, (we will call her) had been showing my friend a photograph of the family group, and naturally many compliments had been paid on their attractive appearance. Madame turned to my friend and said: "Monsieur, you are married, Yes? How many children have you?" My friend feeling ashamed of the poor showing he would have to make, suddenly bethought himself of a ping pong picture which he had in his wallet and which showed five different positions of his one and only son.

He hesitatingly pulled it out with the remark, "This is my family." "Oui, oui," exclaimed Madame, enthusiastically, "Five boys; an excellent beginning for a man so young! Monsieur, you are to be congratulated." Needless to say my friend did not explain.

Our honored Secretary, S. J. Frame, tells me that his report gives a resume of our year's efforts and accomplishments. Such being the case, far be it from me to attempt to steal his thunder, but I am going to tell you **one** thing which I feel quite sure he will not mention, knowing him as I do.

I have enjoyed the privilege, (and I count it a real privilege) of knowing Mr. Frame for some fifteen years. One of our members who attended school with Mr. Frame tells me that I should have known him when he was a boy. However, I can only judge by my

\*Address of the President at the annual meeting of the Canadian Paper Box Manufacturers' Association, Quebec, June 21st, 1920.

own experience and am therefore certain in his report he will say very little about himself, as while he is an indefatigable worker, he is noted at the same time for his retiring disposition.

Our Association is making grand progress. It is built on a good foundation and its lofty ideals place the Canadian Paper Box Manufacturers on a high plane of business integrity, and I know that I voice the sentiment of all those present when I state that we are proud to be members of this organization. Please bear in mind one point, the power behind the throne in the forward movement of our body, is S. J. Frame.

The slogan of our association "Advance," which, by the way, should be adopted as our permanent motto, suggests to my mind a poem of which I am very fond and which with its lofty ideals is well worth repeating here.

"Watch ye, stand fast in the faith, quit ye like men, be strong.

Mr. Bennett has recited a few verses of the well-known hymn.

"Trust in God, and do the right."

Advance in its broader sense means adopting the golden rule in everyday business practice, not in theory.

"For what shall it profit a man,  
if he shall gain the whole world  
and lose his own soul?"

Advance means treating the houses from whom you purchase your supplies with the same consideration that you would have them accord you. It does not mean the David Barum golden rule,—"Do unto others as they would do to you, but do 'em first."

Advance means according your employees the same thoughtful consideration that you are expecting of them. How can you expect co-operation and hearty good feeling from your staff unless you give some thought to the welfare of your business family. They are but human like yourself, and respond quickly to a thoughtful guiding hand, backed up, by the way, by a fat pay envelope.

Advance means trying to gain and hold the utmost confidence of your customers. Have you ever found after quoting a price on a lot of boxes you were able to make them cheaper than you anticipated, and have you sent that same customer a credit note? Try it! You will advance in your own estimation and in the estimation of your customer and the result will be that you will be encouraged to do it again if the opportunity occurs, and if, perchance, at some later date the boot is on the other foot, how easy it will be for you to approach that same customer, having gained his confidence.

No doubt you have all received within the past few days a copy of your book; "The Paper Box Factory - Efficiency and Production." I say **your** book advisedly as its pages contain contributions from a number of our members and without the co-operation which the committee received from our members the book would never have been issued. I wish to mention especially that our Secretary devoted a great deal of time to the compiling of this book which will in my estimation aid materially the advancement of our industry.

We are facing another year with many complex problems but we are fortunate in having a solid foundation on which to build. The broad ideals outlined in our new objects which are to be discussed more freely

later, the suggestions contained in the new book, the hour rates recommended by your Cost Committee and the trade regulations adopted a year ago should be a wonderful help to us all and serve, in a measure at least, to make our day's work a joy rather than a burden.

While we are on the subject of enjoying our work, let us not overlook the need, particularly during these times of stress, of taking a certain amount of recreation, for there is no truer saying than the threadbare one: "All work and no play makes Jack a dull boy." Now some of you may think that this advice is not necessary for the Canadian Paper Box Manufacturers as they respond well to a suggestion of an outing but I do feel that definite rest and enjoyment should be considered by all of us, as it is an important factor in the development of our industry. A day off occasionally with your family on a picnic or fishing trip will remove the cobwebs, enable you to solve that knotty problem and incidentally give your family a chance to get acquainted with you.

I do not wish to be accused of preaching a sermon but I cannot refrain from voicing the thought that there is not enough of the old-fashioned home-like spirit in evidence today either in our home or business. We in North America are devoting too much attention to the pursuit of the "Almighty Dollar," spending our few hours in a hurried luncheon at the club, later in the day, dinner, and theatre with a possible customer, hardly spending enough time at home for our families to know what we look like.

Before closing my remarks, may I be permitted to suggest **caution** in the growth of our industry. Care should be taken in the purchase of new equipment. Be sure that the need exists. Would it not be well, perhaps, to make a careful survey of the equipment in use and on order at the present time and find out how much more we can produce as an industry than we are turning out at present? Is an quite sure that if we had this information in front of us we would find that there is plenty of capacity in the Canadian Paper Box Factories to take care of the increased demand for some time to come.

Do not misunderstand me, however. The writing on the wall indicates unquestionably a rosy future for this fair country of ours and if we all pull together carefully and steadily along sound lines with the high ideals of our association as a guiding star, we will undoubtedly share in the reward to which we are entitled.

I thank you for the attention you have given me this morning and also wish to take this opportunity of expressing my sincere appreciation for the co-operation I have received from our membership during my term of office. We have undoubtedly advanced every year since our industry has been organized, but there is still work ahead of us so I again say "Advance!—Advance!—Advance!"

#### ACCOMPLISHMENTS OF THE CANADIAN PAPER BOX MANUFACTURERS' ASSOCIATION.\*

By S. J. FRAME, Secretary-Treasurer, Toronto.

The Association year ending May 31st last was a very active one being perhaps the most active year thus far in the life of the Association.

\* Report of Secretary-Treasurer at the Annual Meeting of the Association, June 21, 1920.

The President, Vice-President and the various committees have worked very hard for the Association, always giving of their time when required, cheerfully and ungrudgingly.

During the year just ended, the Association has taken up numerous matters affecting the trade, and among its outstanding accomplishments in the year, are,—

The book entitled, "The Paper Box Factory—Efficiency and Production."

The preparation and issuance of a new table of hour rates.

The adoption of new "Objects."

The enrollment of the Quebec Paper Box Co. and Royal Paper Box Co. into membership in the Association, all of the Quebec City manufacturers now being members.

The book is the result of a great deal of work on the part of the contributors, also the members of the Cost and Labor Committee and myself.

Each member, no matter how advanced his methods, if he will take this book and read it carefully, also placing copies of it in the hands of those occupying positions of authority in his plant or aspiring to positions of authority, admonishing them to give it careful attention, will find the book to be most useful through its setting forth in concrete and crystallized form, a high standard of efficiency which, aimed at and earnestly followed, will lead to improved conditions in the Canadian paper box factories.

The new table of hour rates gotten out by the Cost and Labor Committee based on present actual costs, will be very useful to paper box factories who have not their own cost systems; the paper box factories not having their own cost systems who have used the hour rates referred to, having found such to be the case.

The Association is under a deep debt of gratitude to the Cost and Labor Committee for the great amount of work put in by them in the interests of the Association in connection with the "Efficiency" book and the hour rates and other matters.

References to the activities of the Association would be incomplete if the Toronto Carton Club were not mentioned. The Toronto Carton Club has been very active. It has held its luncheons twice each month. Very frequently, these luncheons are attended by outside members, their presence being always welcome.

Also, the Toronto Carton Club has held out-of-town luncheons four times in the year which have been well attended by members from Toronto and by members from outside points.

Considering that the Association as a body meets only once a year, the Toronto Carton Club, through its Toronto luncheons and its out-of-town meetings, and the movements in the interests of the Association which have originated at such luncheons, has continued in a marked manner to exercise a cementing influence on the Association.

The year just ended has been a very satisfactory one for the Canadian paper box industry. The de-



S. J. FRAME,  
Secretary-Treasurer, Canadian Paper Box Manufacturers' Association.

mand has been good and a still greater volume could have been turned out were it not for the shortage of board. However, the shortage of raw materials prevails throughout the world and is not confined to the paper box industry. The Association has endeavored—and I believe with some effect—through communication with the board mills and other recommendations to its members as to the use and ordering of board to ameliorate as far as possible the disadvantages accruing from the shortage of board.

My remarks thus far have related to the progress of the Association during the past year. I am now going to ask you to take a survey of the Association from a broad perspective from its commencement to the present time.

The first seeds towards the formation of the Association were sown at a meeting held at Toronto on September 10th, 1914, at which eight paper box manufacturers were represented. At this meeting, a discussion took place respecting cost systems and the paper box business generally. A committee was then appointed to formulate plans for the formation of an Association.

Subsequently, five meetings of committees and others were held, but the Association made no definite progress until the first Annual Convention, which was held at Toronto on January 30th, 1917. This was a success in every respect, there being twenty-eight paper box manufacturers represented from all parts of Canada, including representatives from as far East as St. John and as far West as Winnipeg. Since that time, the course of the Association has been one of uninterupted success.

While all of the matters taken up by the Association are to a more or less extent, either directly or indirectly of benefit to the industry, yet in an Association of this nature, it is obvious that a great deal of the work accomplished produces benefit of a nature which, while real, is intangible. For that reason, it might be well to set forth the accomplishments, in a general way, of the Association since its inception, they being as follows:

The Canadian paper box manufacturers have become acquainted with each other. Such acquaintance has led to each paper box manufacturer getting to know his competitors and to realize what a fine body of men they are. This acquaintance has also resulted in a spirit of friendship and helpfulness for each other among the Canadian paper box manufacturers, such spirit being of incalculable benefit to them. The good spirit prevailing among the paper box manufacturers is of such an exceptional nature that it has been commented upon by outside parties.

The gatherings of the Association give many members better opportunities of meeting the representatives of the supply houses than what they would have if there were no Association. The supply houses have, in a number of instances, testified to the benefits of the Association.

As a result of the Association, a number of the paper box manufacturers are using uniform cost systems and have given the Association their cost figures for the purpose of compiling hour rates for the benefit of the members generally. In this connection, there is no doubt but that there is a marked movement on the part of members who have not cost systems, to get cost systems installed. This movement

towards uniformity of arriving at costs has a most stabilizing effect on selling prices to the benefit of the industry.

To sum up, instead of the chaotic conditions which were in force previous to the Association, the paper box industry is now well organized in an Association, having in its membership 46 active members and 48 associate members.

The Association is now strong, has proved its permanence, and commands the respect of its members and of all who do business with them. The fact of the paper box industry being organized has raised the prestige and status of the industry.

The Association has continued to bring home to the paper box manufacture a realization of the very necessary function which he performs in the trade of the country by supplying to his customer an article which is a necessity to the customer, and which in fact, apart from its value as a package, helps very materially as an advertising medium to sell the goods of the customer.

The members may well feel proud of the Association, but it cannot rest on its oars. It must continue to steadily pursue its Objects. The progress made by the Association and its unceasing efforts towards further progress are well symbolized in the new Objects adopted by the Association. These new Objects have a place in the program of the present Convention and will be ably dealt with by Mr. C. T. Reid, the Vice-President of the Association.

The Association attained the first "Objects" which it set out for itself. With the spirit prevailing among the members, the Association will keep approaching ever nearer and nearer to the attainment of the new "Objects" which, as you will observe, are printed in the program.

Efficiency is interwoven in the new "Objects," and touching on efficiency, an article written a couple of months ago, says:—

"The clock has struck twelve on industrial and business mismanagement. Clients should realize that all manufacturing concerns will soon have brought forcibly to their attention the absolute necessity of closely studying costs and methods, and of improving the quality of their product. By reason of high labor costs they will be compelled to adopt the most approved and efficient manufacturing practices in order to lower costs of production to a point where an adequate margin of profit can be obtained. A large number of loosely managed concerns will from now on have increasing difficulty in making a profit. Another class of concerns which will bear watching, includes those businesses that have started since 1914. Concerns in this class have yet to encounter and overcome successfully the embarrassments accompanying high production costs and declining selling prices. They have yet to experience what is called a buyers' market."

While self-interest constrains the members to strive for the attainment of the Association's new "Objects" there are higher incentives, to one of which I will briefly refer.

The British Empire (of which Canada is proud to form an important part) after its mighty effort, emerges from the dust of the world conflict victorious, and notwithstanding its scars, still the most powerful human force in the world, marching as of old in the vanguard of civilization. The war being over, to fin-

(Continued on page 708).



# The Experimental Pulp and Paper Laboratory

(Concluded)

## Microscopic Examination of Pulp and Paper

The authors cannot too strongly advise the frequent use of the microscopes in pulp and paper investigations. The technique of the use of the microscope, as well as fibre identification, are fully described in Herzberg's "Papier Prüfung" and in reports by the Committee on Paper Testing of the Technical Association.\* Aside from the examination of the furnish of unknown papers and pulp, microscopic examination of the stock as pulped, study of the progressive heating of the stock, and other innumerable occasions arise where the microscope is of direct assistance. A labiotipon for projecting the appearance of the fibres on to a screen is valuable but not essential.

Considerable chemical work must be done on analysis of cooking liquors, paper and pulp examinations, etc., and space should, therefore, be allotted for this important work.

## Bleach Determinations.

Pulp can best be bleached in a beater equipped with a steam pipe and a washer for removing bleach residues. Experimental bleach determinations can be made by the following method:

A quantity of pulp equivalent to 40 grams of dry stock is used for each individual test. For bleaching tests, pulp obtained from the wet machine or directly after shredding for yield determination is placed in sealed Mason jars and a dry-weight determination is made on a separate portion in order to calculate the required amount of wet pulp per determination. The sample is placed in a small mayonnaise beater, or opened in the baby beater with sufficient warm water. The pulp is then transferred to a two quart pyrex glass jar and the total volume brought to 1600 cubic centimeter. For long fibred stocks, such as those obtained from coniferous woods, from 20 to 25 grams of dry stock are weighed out for each determination. For each bleach determination 6 sets of stock are used, the percentage of bleaching being varied in increments of 2 per cent below and above the required estimated amount. A solution of approximately 80 grams per liter, from 50 to 100 is satisfactory, of bleaching powder (35 per cent available chlorine) is a convenient stock solution. The strength of this solution is determined, as described by the committee of the Technical Association on Standard Methods of Testing Materials used in the manufacture of paper, and from the results of the titration the volume of the solution of the bleach liquor to be used in any particular test can be computed. The bleaching equipment consists of two units, each having a water bath large enough to hold three 2 quart glass aquarium pans and a heating element which on "low" will maintain the bath at 100-110 F. Further, by means of a motor, a glass agitator is caused to revolve in each jar, thereby stirring the stock.

Bleach tests are usually started at 4 p.m. and removed next morning at 8 a.m. By means of the starch-iodide solution, each sample is tested to determine whether the chlorine is exhausted. The bleached stock is washed on a fine wire screen with a stream

from a hose and made into sheets on a hand mould. The sheets are conched between woollen felts on the press of the paper machine and dried over the dryers. Comparisons are then made with a standard white sheet.

Many laboratories bleach by making an excess of bleach and determine the excess of free chlorine by addition of potassium iodide and titrating back by standard thiosulphate. This method is not considered as satisfactory as the one just outlined, since the excess of bleach used there is danger of loss of an appreciable percentage of free chlorine gas, especially if the bleaching test is conducted at a high temperature. Further, in any chemical test or bleaching operation, there must be used a slight excess of chemical or chlorine in order to complete the reaction, and, according to the second method of testing, all traces of free chlorine are titrated back and deducted from the amount originally added. This method of experimental bleaching tends to give high results if chlorine is mechanically lost and to give low results from the back titration of the slight excess of chlorine which is actually required in the bleaching.

## Recording of Color

To record the color or degree of whiteness of pulp and paper numerically is extremely desirable. The method for measuring the relative degree of whiteness of various pulps has been described in the report of the Committee on Sulphite Pulp of the Technical Association of the Pulp and Paper Industry. The Hess-Ives tint photometer, which is one type of colorimeter, is valuable for recording the color of paper in terms of parts red, blue, green, and black, as observed through the standard color screens supplied with the instrument. The instrument, according to the laboratory's experience, has its limitations as it is not so sensitive as the eye for detecting of small color differences. Further, the reading obtained by the instrument is decidedly affected by the glare or finish of the paper, and for pulp sheets by the roughness of the surface or the oxidation. A rapid and accurate means of recording color of either pulp or paper is very desirable, but no such means or apparatus is known to the laboratory. For a more detailed account of the operation of the Hess-Ives tint photometer, the reader is referred to a paper by Otto Kress and G. C. McNaughton, entitled "A Numerical Expression for Color as given by the Ives Tint Photometer," "Paper," August 2, 1916; also to another article by the same authors entitled, "Further Studies on a Numerical Expression for Color as given by the Ives Tint Photometer."

The study of the coloring of paper, evaluation of strength and quality of dyestuffs, and the apparatus and method of procedure has been recently described by one of the authors of this paper. See Pulp and Paper Magazine, March 11, 1920, page 253.

**Records:** The recording of experimental data is important and the following log sheets used at the laboratory for recording cooking and strength data may be of interest. To the record of the cook is attached, for filing purposes, the recording temperature and pressure gauge charts for that particular cook. The log sheets can, of course, be modified to suit the individual laboratory or mill conditions.

\*These reports can be had from the Secretary, Technical Association of the Pulp and Paper Industry, Room 1102, 18 East 41st Street, New York.

U. S. DEPARTMENT OF AGRICULTURE (FOREST SERVICE)

FOREST PRODUCTS LABORATORY (MADISON, WISCONSIN)

Cook No. ———

Proj. No. ———

Species ———

Log of Digester Charger, Soda and Sulphate Pulping.

Date ———

**Wood**

	Wt. of Can	Lbs. Total	Na <sub>2</sub> S Solution			NaOH Solution	
Weight of moist chips			lbs. = gal.			Lbs. =	Gal.
Per cent bone dry			Sp. gr. =		Sp. gr.		
Bone dry weight of chips			l. Thio	Acid	Acid		
Weight of water in chips							
Volume of water in chips			NaOH — g.p.l.	lbs.			
			Na <sub>2</sub> S = g.p.l.	lbs.	NaOH = g.p.l.	lbs.	

**Cooking Liquor**

**Water**

**Black Liquor**

NaOH = lbs. g.p.l. %	Lbs. = gal.	Free Alkali Total Alkali
Na <sub>2</sub> S = lbs. g.p.l. %		Sp. Gr. =
Liquor gal. gal. cwt.	<b>Remarks</b>	Ratio combined to total = %
		Bleach required %

Shipment No. ....

U. S. FOREST PRODUCTS LABORATORY

Project No. ....

Cook No. ....

Species .....

Date .....

WOOD PULP AND YIELD DATA.

Wood	Container	No.	No.	No.	Total
Wt. moist chips and container (lbs.)					
Wt. container (lbs.)					
Wt. moist chips (lbs.)					
Wt. sample moist (lbs.)					
Wt. sample bone-dry (lbs.)					
Per cent bone dry					
Wt. bone dry chips used (lbs.)					
<b>Pulp:</b>	<b>Container</b>	<b>No.</b>	<b>No.</b>	<b>Total</b>	
Wt. wet pulp and container (lbs.)					
Wt. container (lbs.)					
Wt. pulp (lbs.)					
Wt. sample wet (lbs.)					
Wt. sample bone dry (lbs.)					
Per cent bone dry					
Wt. bone dry pulp (lbs.)					
Wt. drain catch bone dry (lbs.)					
Wt. total pulp bone dry (lbs.)					
Yield bone dry crude pulp on basis of weight of bone dry wood Per cent					
<b>Screenings:</b>	<b>Container</b>	<b>No.</b>	<b>No.</b>	<b>Total</b>	
Wt. wet screenings and container (lbs.)					
Wt. container (lbs.)					
Wt. sample wet (lbs.)					
Wt. sample bone dry (lbs.)					
Per cent bone dry					
Wt. bone dry screenings (lbs.)					
Yield bone dry screenings on basis of bone dry wood Per cent					
<b>Screened Pulp:</b>					
Yield crude pulp per cent					
Yield screenings per cent					
Yield screened pulp per cent					

U.S. DEPARTMENT OF AGRICULTURE — FOREST SERVICE.

*Forest Products Laboratory, Madison, Wisc.*

*Ship't No.*..... **STRENGTH AND WEIGHT TESTS ON PAPER** *Project No.*.....  
*No.*..... **OR PULP** *No.*.....  
*Observer* ..... *Date* ..... *Computed by* ..... *Checked by*.....

Species and description.....  
 Wet bulb temp. ... F. Dry bulb temp. ... F. Per cent relative humidity .....

Test No	BURSTING AND TEARING TESTS								SCHOPPER TENSILE AND FOLDING TESTS							
	Wight per Ream.	Thick-ness.	Burst'g St'gth.	Tearing Strength				In Machine Direction				Across Machine Direction				
				In Machine Direction	Across Machine Direction	Thick-ness	Tensile Str'ght.	St'rech	W'ght of Strips	Fold'g Test	Thick-ness	Tensile St'gth	Stretch	W'ght of Strips	Fold'g Test	
	Lbs.	Inches	Lbs. per sq. in.	Lbs.	Lbs.	Inches.	Kilo-grams	Per cent	Grams	Double folds	Inches.	Kilo-grams	Per cent	Grams	Double folds	
1 to																
10																
Total																
Average																

Average bursting strength per pound team ..... lbs. per sq. in.  
 Average bursting strength per 4-10,000" thickness ..... lbs. per sq. in.  
 Average tearing strength per pound, per team ..... lbs.  
 Average breaking length ..... meters  
 Average stretch ..... per cent  
 Average folding test ..... double folds

Tearing strength in machine direction ..... lbs.  
 Breaking length in machine direction ..... meters  
 Folding test in machine direction ..... double fold.  
 Tearing across machine direction ..... lbs.  
 Breaking length across machine direction ..... meters  
 Folding test across machine direction ..... double folds

Remarks

U.S. DEPARTMENT OF AGRICULTURE — FOREST SERVICE.

*Forest Products Laboratory, Madison, Wisc.*

**LOG OF COOK**

*Cooking Liquor:*

*Ship't No.* ..... *Total SO* .....  
*Project No.* ..... *Free SO* .....  
*Cook No.* ..... *Comb. SO* .....  
*Species* ..... *Gal. Acid* .....

*Date* ..... *Observer* .....

Hour	Cook Duration Hours	Digester Therm.		Digest Steam Pres. lbs.	Digester Gauge		Digest Temp. Pres.	Total Volume in digester	Relat. Equiv. Gal.	Remarks
		Read	Cor.		Read	Cor.				

*Space is allowed for 11 observations*

..... A.M.  
 ..... P.M.  
 ..... A.M.  
 ..... P.M.  
 .....  
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U.S. DEPARTMENT OF AGRICULTURE — FOREST SERVICE.

*Ship't No.*..... *Forest Products Laboratory, Madison, Wisc.* *Project No.*.....  
*Cook No.*..... *No.*.....  
*No.*..... *No.*.....  
*Data on*.....  
*Observer* ..... *Date* .....

NOTE—This is the heading of the quadrille ruled cross section paper, used for plotting curves. This paper is employed to facilitate blue printing. The divisions are in 1/10 inches; the ordinates numbered every 1/2 inch by tens to 150 and the abscissae running the short way to the 7 1/2" x 8 3/4" sheet, numbered from 0 to 18. The word "Hours" is printed below, and is followed by a line for "Remarks."

## British Trade News

(From Our London Correspondent.)

London, 14th June, 1920.

The Canadian Industries Exhibition was opened in London during the week by the Hon. Sir George Perley, K.C.M.G. It is the first exhibition of its kind to be held in England and it is a modest attempt to bring before the British public the quality and measure of Canadian products. All the stands were neatly and attractively laid out and everything looked pleasing to the eye. Stauntons, Ltd., of Toronto, had a very fine display of their wallpapers, 22-inch width, and I much admired their stand for the way it was dressed. Their semi-trimmed papers were shown off to perfection, and they had also some nice ready-cut borders, all produced in Toronto. Lower down the exhibition the Reg. N. Boxer Co., Ltd., also of Toronto, had a stand under the supervision of their British agents, The Tynecastle Co., of Edinburgh and London. They showed all descriptions of wallpapers manufactured by them and chief among them was a very fine collection of tapestry papers. The quality of the papers and designs and colorings were commented upon for their rich and high standard, and reflected much credit on the firm. Large crowds were attracted to the stand of the Canadian National Railways, where the intricacies and wonders of papermaking and pulp grinding were on view. This exhibit was prepared by the Forest Products Laboratories at Montreal.

### Canadian's Competitors.

The supplies of groundwood (wet) received from various sources are given as follows for the first five months of 1920, compared with the same period in 1919:

	1919.	1920.
Sweden . . . . .	9,228	11,258
Norway . . . . .	117,116	141,688
Canada . . . . .	2,400	490
Other places . . . . .	1,940	1,543
Total tons . . . . .	130,684	154,979

It will be seen that Norway is one of Canada's greatest competitors in this market. Here 141,688 tons are valued at £1,588,605 and Canada's 490 tons are returned at £5,820. Supplies of bleached chemical (dry) were received as follows for the five months ending May:

	1919.	1920.
Sweden . . . . .	1,038	1,955
Norway . . . . .	4,571	8,215
Germany . . . . .	—	190
Canada and other places . . . . .	607	3,105
Total tons . . . . .	6,216	11,095

### Sweden's Pulp Supplies.

Here we see supplies more than doubled. Canada had a fair share in supplying this raw material. Germany, it will be noticed, has sent 190 tons valued at \$22,102. A notable feature in the past five months' trade is Sweden's supplies of unbleached chemical (dry). No less than £3,542,000 worth of this class of raw material has been placed on the British market, and soon found its way into the mills. The total sup-

plies from all quarters ending May last—five months—were as follows:—

	1919.	1920.
Finland . . . . .	—	15,443
Sweden . . . . .	54,797	114,731
Norway . . . . .	21,198	44,024
Germany . . . . .	—	936
Canada and other places . . . . .	15,824	13,988
Total tons . . . . .	91,819	189,122

Finland, it will be seen is sending supplies to England. During May last this country contributed 3,927 tons of unbleached chemical, valued at £141,174. Canada has been sending a fair share of the 13,988 tons from "other places," but the quantity is below pre-war figures. In fact the best part of 13,000 tons came from the Dominion. During the period covering January to April, Sweden exported to all markets 207,500 tons of sulphite and sulphate, as against 128,000 tons during the same period in 1919. While the country's pulp exports have considerably increased the exports of paper from the same source have equally diminished. This is due to domestic demands and the holding of small stocks to see how the markets turn.

### Exports to Canada.

During the month of May British mills reported to Canada: 57½ tons of printing paper, worth £826; 7 tons of writing paper, valued at £142; and 55 tons of other paper, worth £1,078.

The total exports of paper to all countries were as follows:

	Printing—May. Tons.	Writing—May. Tons.	
1920 . . . . .	3767 16 20	£286,314	8863¼ £101,373
1919 . . . . .	1398	103,875	496 2 20 68,637
1913 . . . . .	8676 9 20	168,537	850 6/20 40,930

Printing paper, that is newsprint, was received from the following countries and I quote the values so that paper mill men arrive roughly at what the cost is like:

	Tons.	
Sweden . . . . .	1,943 7 20	£88,020
Norway . . . . .	1,665 1 5	82,933
Germany . . . . .	8,043	47,576
Belgium . . . . .	37 17 20	3,574
U. S. A. . . . .	271 6/20	14,529
Newfoundland . . . . .	3,710¾	197,294
Canada and other places . . . . .	4,780	237,290

Packing and wrapping paper was imported to the extent of 19,891¾ tons valued at £1,152,648. Owing to a reclassification by the Trade Board it is very difficult to find out now what is actually coming into the market, different grades of paper being mixed up with each other so that the technical man cannot unravel the figures.

### Notelets.

During May 31,611 tons of strawboards were sent to the British market.

811 tons of coated papers were exported in May from Germany, Belgium, France, U.S.A., and Canada to England at a value of £75,069.

More labor trouble! The workers in England want 12 per cent an hour extra. Mill owners say it is preposterous.

British mills are giving orders out pretty freely for new papermaking machinery.

# PULP AND PAPER NEWS



In conjunction with a large tract of freehold timber lands recently acquired in the Sudbury, Ont., district by the Continental Wood Products Co., a subsidiary of the Continental Paper and Bag Mills Co., a second pulpwood preparing plant and sawmill will be erected, and for that purpose a site is now being cleared.

Waste paper will be utilized by the Red River Paper Mills Co. in the manufacture of wrapping at its new plant in Winnipeg, Man. The mill is situated on Linden Ave., Norwood, and has a river frontage of 350 feet, with facilities for shipment of the product. Wrapping papers, manufactured from mere waste paper collected and paid for throughout the city, will be the initial product of the new mill. Other adjuncts will be manufactured after the mill has been operating for a short time.

The Women's Press Club of Toronto, enjoyed a pleasant outing at Niagara-on-the-Lake on Saturday last where they were the guests of Mrs. Edmund Phillips. Picnic supper was enjoyed on the lawn and the party returned to the city on the late boat.

Mr. S. J. B. Rolland, President of the Rolland Paper Company, was in Toronto this week on his way back after attending the annual meeting of the Canadian Manufacturers' Association in Vancouver. The Rolland Paper Co. is at the present time undergoing considerable expansion, work being in progress which will increase the company's output by about twenty per cent. Mr. Rolland was greatly impressed by the business possibilities of the Canadian west but, as he states, his visit was more in the nature of a holiday trip and as such he didn't size up the situation from a paper standpoint. Mr. Rolland spent a few days in Toronto visiting a number of his customers.

Mr. Wright, of Smith, Davidson & Wright, wholesale paper dealers of Vancouver, was in Toronto this week, on his semi-annual buying tour.

Mr. N. E. Wainwright and Mr. F. C. Bagley of the Canada Export Paper Company, Montreal, were in Toronto on business this week.

The Don Valley Paper Company, Limited, Toronto, are putting a new roof on their machine room and extending the size of the room. The improvements will take some weeks to complete.

Mr. John Ball, manager of the operation department of the pulp and paper division of Price Brothers, has resigned his position and is now connected with Mr. U. M. Waite of New York, and his associated companies.

The shareholders of the Spanish River Pulp and Paper Mills, Ltd., at a special general meeting in Toronto on Wednesday of this week unanimously approved of a bylaw passed by the Board of Directors providing for the issue and allotment of preference shares of the company amounting to 42 per cent of the par value of the outstanding preference stock up to June 30th, 1920, and also a further amount to retire the dividend vouchers issued last year with respect to the one year's dividend on the original issue of \$3,000,000 of preference stock. The bylaw

will accordingly become effective July 1st and the issue of preference stock will be made to the shareholders of record on June 30th, 1920, and to the holders of dividend vouchers to which reference has been made.

Mr. W. H. Sherriff, of the Hodge-Sherriff Paper Co., returned this week from a trip throughout the Canadian west to British Columbia, in the course of which he called upon the firm's customers. Mr. Sherriff noted an optimistic spirit in business circles generally, but states that this spirit is not so noisily expressed as used to be the case when the average westerner was inclined to forget about the vagaries of the elements and their effect on business conditions in the west. There is the same optimism, but it is tempered now through past experiences with fictitious booms and weather that knocked out the crops. Mr. Sherriff found the same conditions existing in the paper trade in the west as exist here, the shortage of kraft being especially noticeable. As a matter of fact, the shortage of this class of paper is so great in the west that they are buying manila as a substitute, when it is possible to secure supplies of that commodity.

The Paper Specialty Company has begun business at 111 Spadina Avenue, Toronto, as successors to the O. P. McGregor Paper Company, which some months ago went out of business.

Mr. E. H. Macklin, President and General Manager of the Manitoba Free Press, was in Toronto this week, on his way back to Winnipeg, after spending a few days in Hamilton.

Mr. P. S. Church of the paper sales department of the George H. Mead Company, of Dayton, Ohio, was in Toronto this week. Mr. Mead, the President of the company, who was in the city attending the meeting of the Spanish River Pulp and Paper Mills, was a caller at the company's Toronto Office.

Mr. Robert Flynn, who has been with the Buntin Reid Company, Toronto, for twenty years, most of which time has been spent in charge of the warehouse department, has been appointed manager of the company in succession to the late Mr. Crichton. Mr. Flynn is one of the best known and best-liked paper men in Toronto, and his promotion in the firm caused deep satisfaction amongst his many friends. Mr. Robert Downie, who went on the road some months ago, has been brought in from his territory and has been appointed assistant manager. No outside man has yet been appointed to take Mr. Downie's place.

The Kaministiquia Pulp and Paper Company, Limited, has been granted incorporation by the Ontario Provincial Secretary's Department, and will operate in the Port Arthur district. The company is capitalized at \$1,000,000 and is authorized to construct, operate and maintain mechanical and groundwood pulp, paper, cardboard and other manufacturies. Among the incorporators are: Arthur E. Murdock and John E. Regan, financial agents, of Toronto. The prospectus of the company has not yet been issued.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, June 26. Evidence accumulates that conditions are improving in at least one branch of the paper industry. The proprietor of a western Ontario country weekly on opening his mail one day this week discovered a letter from one of the distributors with whom he had placed an order for newsprint which read as follows: "Dear Sir, We are in receipt of your esteemed order of the 12th inst. and in reply would state that we are filling your order at once and are sending it forward by first freight. Thanking you for this business and hoping to be favored with your further esteemed orders, we are, etc." The publisher rubbed his eyes and after re-reading the letter to make sure that his sight was not playing him tricks, he heaved a sigh of relief at this evidence of the termination of his troubles. To be thanked for his order and to realize that even now his shipment was on the way, proved a severe shock to his system, but it is stated that he will survive. The manager of the Canadian Weekly Newspaper Association is authority for the further astounding statement that one of the weekly publishers on his list had reported that his cellar was full of paper. Are these facts portentous signs of a changed order of things in the newsprint world or do they indicate that the publishers have been more scared than hurt by what they feared was going to be a real famine? In any event it would appear that publishers are less "jumpy" now and that for the most part they are being fairly well served.

In other lines of paper, conditions and prices remain unchanged and while new pulp and paper enterprises are being launched, paper securities going up and the industry generally undergoing great expansion, the shortage of both raw stock and finished product is pronounced. Prices are high, and are likely to go higher, and there is talk in the trade of a further increase of from 15 to 25 per cent in July on most lines of cheaper grade of book, bonds and ledgers and from 10 to 15 per cent on the higher grades, although these have not been officially announced. This will mean that on some lines, when 30¢ for crates and 25¢ a hundred pounds for freight are considered, the cost laid down in the jobber's warehouse will be as high as \$17.50. If the advance goes into effect the consumer will have to pay a still more fancy price for his paper.

### Newsprint.

Practically all the daily and weekly publishers have now renewed their contracts for new supplies for the next three months at 5½¢ cents for roll and 6¢ for sheet news from two tons up. Supplies are coming through fairly freely and most of the publishers are being well looked after. Those who have not succeeded in getting their contracts signed up, however, are experiencing considerable difficulty in getting supplies and the few small lots that can be picked up in the open market are liable to cost over ten cents a pound and some newsprint is known to have sold as high as 14¢ a pound for spot lots. On the whole, the newsprint situation, as far as supplies to the publishers are concerned, may be said to be in a fairly satis-

factory condition considering the difficulties the mills are under in meeting the big demands that are being made.

### Book Papers.

The shortage in book papers throughout the country is indicated by the fact that hardly a sheet is to be had in Toronto. None of the jobbers have any stocks on hand to speak of, and as in the case of all other lines, orders are only being taken at the price prevailing at the time of shipment. High prices continue to rule, and what would appear to be the peak was reached this week, when 16½¢ cents was paid for a line of No. 3 book by one of the Toronto printing firms. The fact remains, however, that this grade of paper can be had for several cents lower than that price, there having been no jump in price during the past few days, except in cases where mills were prevailed upon to make special efforts to supply spot lots which the customer was ready to pay almost any price for. A canvass of a number of the paper warehouses in Toronto revealed the fact that book papers were not included in the small stocks of paper on hand and a bundle of the commodity was sought for in vain.

### Wrapping and Tissues.

The week saw an advance in the price of sulphite wrapping of 2¢ a pound. Colored sulphite drug is now up to 16¢, which is two cents higher than the prevailing price for the past couple of weeks. Paper towels have also advanced twenty per cent, but there is no change in the price of tissues. The mills, however, are taking no orders for tissues that they can avoid, and while there is a price list it is little use to the customer who buys on the understanding that he will pay the price prevailing at the time the goods are shipped. Mills are several months behind in their orders, and there is no immediate prospect of an improvement in the generally chaotic conditions that are existing in the tissue paper trade. In the specialty lines, such as white and colored tissues, there has been an advance in price, the lines mentioned now selling at \$100 a thousand l.o.b. mill, which represents an increase of \$20. The Interlake Tissue Mills, Limited, at Merritt, which supplies the greater part of these tissue lines, are making good progress with their new mill addition and an initial shipment of parts for their new paper making machine has now arrived.

### Ledgers and Bonds.

While prices remain unchanged in these lines, the shortage continues, although in some grades small stocks are available. There is a great demand for these classes of paper, and most of it is picked up as soon as it reaches the warehouses, although some lines are coming through freer than some of the other standard lines of papers.

## NEW YORK MARKETS

New York, June 26. Some of the snap to spot demand for paper has been eliminated by the slowing up of activity in other lines of merchandise, and yet there is a steady tone to the market and prices evince a firm trend. As far as is visible, no one is lowering prices to obtain business—neither manufacturers nor



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**SOLE AGENTS** in the United States, Canada, Mexico and Cuba for  
**Finnish Wood Pulp Union, Helsingfors, Finland**

a combination of the foremost Ground Wood Pulp and Board Mills in Finland, makers of various kinds of boards and dry and wet Brown and White Mechanical Wood Pulp.

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jobbers. The fact of the matter is that sellers of paper have all the business in hand they can accommodate, being booked far ahead with orders, and instead of seeking fresh business, the majority of concerns are obliged to turn down proffers of business in frequent cases.

Mills with few, if any, exceptions continue to operate at as full capacity as prevailing labor and raw material conditions will allow. There are some paper plants, notably in the New England district, which are hampered by lack of raw material resulting from the recent railroad tie-up, and these mills are running somewhat below full production, but it can safely be said that most paper mills in the States are operating at close to 100 per cent capacity. The sole idea possessed by the paper manufacturer today is to make headway in catching up with deliveries, and no stone is being left unturned in an effort to produce as much paper as possible.

As stated above, demand has eased off to an extent in some parts of the trade. Only certain kinds of paper are affected, and the reduced operations of buyers have had little influence on the market for the reason that manufacturers are booked up in such fashion that a falling off in inquiry is of light consequence to them for the present. Should demand continue to recede, it might eventually be a different story, but opinion among paper men is that before mills are anywhere near caught up with deliveries demand for paper will have sprung up anew, it being generally believed that those buyers now refraining from absorbing supplies will of necessity be in the market for larger amounts of paper in the near future.

One of the strongest factors having to do with the situation is that there is a tremendous potential demand remaining unfilled, which leads producers to feel that should activity in any one part of the industry slow up that increased buying in other directions would more than offset the quieter condition in some corners of the trade. For instance, it is well recognized that daily newspaper publishers are omitting columns upon columns of advertising from nearly every issue because of their inability to get all the newsprint required. This is the one division of the trade that has witnessed the most pronounced slowing up in demand, and this condition is believed due to no other reason than that publishers are purposely keeping out of the spot market in the hope that they may effect a lowering of prices. It goes without saying that could newspaper publishers secure larger supplies of paper they would eagerly purchase them so as to carry the advertising they are now obliged to refuse. Advertising revenue is the source of income which keeps daily newspapers going and it is a certainty that publishers are not omitting advertising of their own free will.

Spot prices on newsprint continue to range from 12 cents upwards per pound at mills, and sellers experience no trouble in finding buyers for such lots as they have to dispose of. The book paper market is firm to an extreme. Mills are sold far ahead and in most instances are refusing to accept additional business excepting from regular customers, who are obliged to place orders to be filled when mills are in a position to do so and at prices prevailing at time deliveries are made. Tissues and wrappings are in little less demand, which seems due to buyers holding off in covering forward requirements rather than to any recession in consumption. While one hears a lot about depression in the clothing and various retail mer-

chandising lines, department stores in New York are doing a large business, which would indicate that stores in other parts of the country are doing likewise, in view of which it is unlikely that the consumption of wrapping and tissue paper has decreased. Prices are maintained and mills in common are busily engaged in filling back orders as well as the new commitments they are entering into.

Fine papers rule firm in price and are being absorbed in steady volume. The market seems bare of surplus stocks and as soon as bond or ledger paper of any quality is offered it is quickly snapped up by buyers. In fact, dealers or mills are not called on to do much offering out of stock these days; buyers come direct to them and taking all the supply to be had. There is a large demand for fine papers for export and everything points to a good part of it going unfilled. Local exporting firms are frank to say that they could put through by far more business with foreign customers if they could get the necessary paper to sell. Here is another factor which has an important bearing on the market, one which would likely come into much prominence should domestic demand undergo any material decline.

The board market is firm and there is but little spot supply of any grade of board to be had. Mills are quoting around \$115 dollars per ton for plain chip board and from \$125 up for news board and say they are having no difficulty in securing these prices.

**GROUNDWOOD.**—The market for ground wood rules firm and the outstanding feature is still the tight supply situation. Very little mechanical pulp is available for spot delivery or for shipment sometime hence, and sellers fortunate to have some surplus stock to sell in the open market are getting all manner of prices for it. Quotation on spruce pulp of prime quality range from \$110 upward a ton at grinding mills. There have been actual sales at \$130, in some instances, and as much as \$140 has been removed paid, but about \$120 is generally recognized as a fair market level at the moment. Frequent reports are being received concerning the difficultly grinders are experiencing in obtaining ample supplies of pulp timber, and this condition obviously hampering manufacturing operations.

**CHEMICAL PULP.**—Prices on chemical woodpulp are firmly maintained and there is a continuance of brisk demand for all grades. Consumers are sorely in need of supplies in most cases and prices play a secondary role to that of delivery today, which means that buyers are meeting almost any figure asked so long as they are assured of getting pulp promptly. No quotable change in prices has occurred this week, but under existing circumstances prices are mainly nominal and it is difficult to ascertain what actual market values are. Newsprint sulphite has sold up to 8 cents a pound at pulp mills, while reports have been heard of sales of domestic bleached sulphite at substantially better than 12 cents. No. 1 kraft pulp of domestic origin commands 7 cents per pound, and foreign kraft has sold at as high as 8 cents ex dock.

**RAGS.**—An easier condition has developed in the papermaking rag market. The movement into consuming channels is lighter and prices in a majority of cases have fallen slightly. The reason for this apparently is that paper manufacturers, having covered their immediate requirements are now holding off in buying, as is usually their wont at this season of the year. Certainly there are no weakening factors visi-



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Acridine Yellow R.	Safranine B.S.
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Chrysoidine Y. conc.	Methylene Violet 2R. conc.
Basic Green B. conc.	Methylene Violet 2B. conc.
Methyl Violet 2B ex.	Malachite Green Crystals.
Methyl Violet 4R ex.	Methylene Blue B.B. conc.
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## SUBSTANTIVE COLOURS

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Paramine Yellow R.	Diazamine Fast Yellow H.
Paramine Brown G. conc.	Rosophenine 10B.
Paramine Brown M.	Benzopurpurine 4B.

Paper Black 3181

## ACID COLOURS

Orange II.	Ponceau G. conc.
Orange IV.	Ponceau 4R conc.
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Acid Prune V.	Carmoisine S.
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ble in the rag situation; on the contrary everything would seem to point to even higher prices in the fall if consumers come into the market to buy in customary volume at that time. France has placed an export embargo on all kinds of rags, and importers say they are having increasing trouble locating sizable amounts of stock in other European countries, while it is an established fact that domestic collections this spring have not begun to approximate those of previous years. Roofing rags have scored the largest decline in price and business has been reported at well under 3 cents a pound at shipping points for No. 1 packing, sales down to 2.75 cents having been rumored. Old whites are in less demand and are selling at from 14 cents upward for No. 1 repacked whites, while old thirds and blues are freely available at around 4.75 cents a pound f.o.b. shipping points. New cuttings of most kinds hold fairly steady in price, dealers as a rule being unwilling to sell at reduced figures while contending they are getting but a few fresh lots from cutting establishments.

**PAPER STOCK.**—Waste papers are in fairly good demand and, with the exception of one or two grades, prices are well maintained. Flat stock continues to ease off owing to the relatively narrow outlet among mills for this grade, and a little easier tendency is evident in folded newspapers, but mixed paper is firm at a quotable basis of around 1.90 cents a pound New York for No. 1 packing, and kraft, manila and other specialty papers are in constant call, as are shavings No. 1 hard white shavings are selling at 7.50 to 8 cents per pound at shipping points and soft white shavings of No. 1 quality at 6.75 to 7 cents, while No. 1 old kraft has sold this week at close to 5.50 cents New York, establishing a new high value for this kind of paper. Collections are fair although dealers say they are not receiving the tonnage of fine grades of shavings that they ordinarily do.

**OLD ROPE AND BAGGING.**—Old rope is moving toward mills in a fairly steady way and at unchanged prices, dealers reporting sales of No. 1 manila rope at around 7.50 cents a pound. There is little activity of an important scope in old bagging, which is freely available at a basis of 3.25 cents f.o.b. shipping points for No. 1 scrap bagging. Strings are in good call and notably steady, while gummy is moving in moderate quantities on contract.

"The modern A. B. C. for the whole community stands for 'Always Be Careful,'" says the Safety League.

## PAPER BOX MAKERS MET AT QUEBEC.

(Continued from page 698).

ish up the British Empire will re-establish and maintain its commercial and financial supremacy, its hold upon which, during the war, it temporarily relaxed.

As the drops help to form the ocean, each one can do his little bit, in this respect, and live up to the glorious tradition embodied in the Latin saying "Civis Britannicus sum."

### THE OBJECTS OF THE PAPER BOX MAKERS' ASSOCIATION.

Address by C. T. REID, Vice-President, at the Annual Meeting.

When I went up to Chicago, five years ago, and told some of the good fellows in the Western Association of Paper Box Manufacture what a bunch of crabs the men in our trade at home were, they asked me how I knew, and I said I judged entirely from what I had heard. And their advice was to get them organized and get to know them well and my judgment would change and it did. Up to that time I had never been in a competitor's plant and no competitor had ever been in ours. Since that time I have been a welcome visitor in all of them, have borrowed stock, or used their equipment in emergencies and they have done the same with us. The Association has accomplished much for the entire trade in Hamilton. We are optimists now about our own industry as being a growing asset of the community, and we do not damn the business, because of the rottenness of our competitors as we used to do. Of course we damn the board mills and the paper mills, but as they are all pretty well supplied with dams of their own, ours do not phase them much. The way the association has kept us in touch with the trend of the times, as far as our own business is concerned, has helped to make us optimists. Of course, there are all kinds of optimists, and in the past the paper box business has had too few of any kind. As good a definition as I have heard of an optimist is that he is a man who can see a light in the dark, where there isn't any, and the pessimist is the man who comes along and blows it out.

Coming to changes in the by-laws you will note that we will endeavor in future, by mutual co-operation among the members, to:

"Uphold the standing of the paper box business, by educating the general public to a realization of the usefulness and increasing necessity of the paper

# P. A. P. A.

## SCREEN

Pulp and Paper Mill Accessories, Limited  
MONTREAL, Canada

# How to measure the cost of a gasket

**W**HY should the cost of a gasket be measured by the actual cost of the piece of sheet packing from which it can be cut? If a gasket blows out, its cost will certainly be many times the difference between the price of a poor packing and that of good packing at a few cents more per pound.

Do you realize that a 4" flange can be *properly* gasketed at an *additional* expense not exceeding 2 cents even if the proper sheet packing costs 20 cents per pound more than the ordinary kind? You would not be willing to have a gasket blow out for 2 cents or many times 2 cents.

Even where a small difference in price per gasket might amount to a considerable total, remember this—the risk of blow-out increases directly as the number of gaskets.

Service Sheet, from which gaskets are cut, is the result of the elimination of weaknesses in sheet packing. Service Sheet may cost more, per pound—and even more per gasket than some other asbestos fibre sheet packing—but its factor of safety is figured so high that the possibility of a blow-out is, as nearly as possible eliminated.

There's a better way of figuring the cost of a gasket, rather than by the cost per pound of the sheet from which it is cut.

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# JOHNS - MANVILLE

## POWER PLANT MATERIALS

box, and the extent and size of the paper box industry.

"Raise the general standard of efficiency of those in the business, whereby the capital involved shall have a proper return thereon, the management shall be adequately rewarded, the wages paid and factory conditions shall be such as to attract a good class of labor, and to improve the quality of the product turned out.

"Exchange information as to costs and other matters of general interest relating to the paper box business.

"To maintain and continue, by social intercourse, the good feeling at present existing among the trade, and those supplying it."

The paper box business has been no mean factor among the many that have contributed to the modern conditions of living. As it is true that no man lives to himself, so it is true of business. Can you conceive of the chaos that would exist if there was at this hour a total stoppage of the supply of paper boxes on this continent? You have often heard of the rock of supply upon which the great oil trusts were founded. That oil was absolutely necessary to the manufacturers of everything in the way of tools or machinery that man-kind uses either to provide clothing, or food or shelter or transportation. On the immense scale of modern business, how could hundreds of thousands of articles necessary to human comfort be marketed in acceptable condition, without the paper box? The

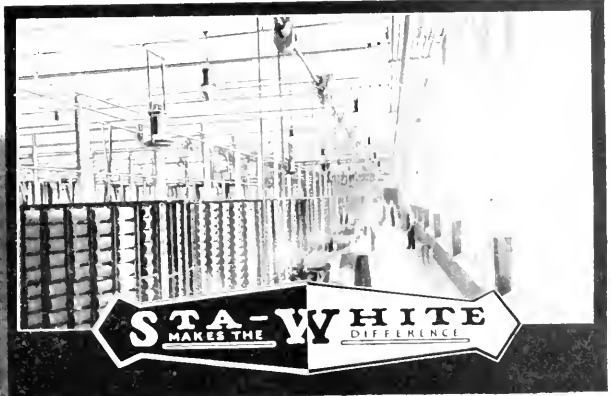
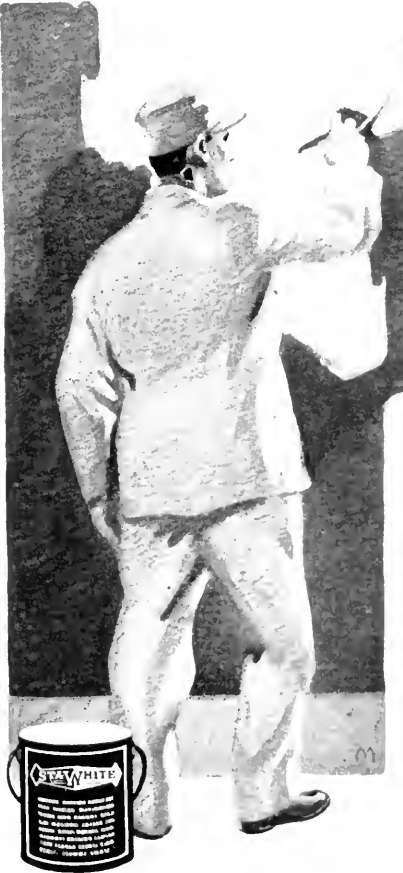
general use of the paper box has revolutionized the packing and shipping methods of two thirds of the manufacturing business of the world, and the paper box can take credit for much of the speed with which the finished article in hundreds of lines of manufacturing, is packed and stored or shipped. After being considered for half a century a low down competitor of the wooden box, the paper box now takes the lead, and in the field of shipping cases, the paper container is rapidly superseding that of wood. Stick your chest out, Mr. Paper Box Manufacturer, and you will help the public to realize your importance in the world. Vie with other business men in your own community in public spirit. Make yourselves count in everything that is for the betterment of your home town. Belong to at least one organization that will give you a broader community vision than you can possibly get by devoting all your waking moments to your own business. Be proud of your business.

Put pep into all your dealings with your factory, and do not believe that conditions are anything but ideal now, nor that they cannot be made a lot better. Carry this pep into your relations with your competitors. Be glad of every chance to exchange information as to costs, or deliveries, or shop methods. It has been often and truly said that the paper box business is only in its infancy, that only the fringe of the possible uses of paper and card-board for contained purposes, has been touched.



W. P. BENNETT.

Retiring President, Canadian Paper Box Manufacturers' Association.



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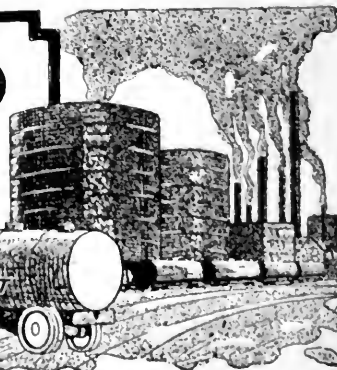
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# Pulp and Paper Magazine

## OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., July 8, 1920

No. 28

### TABLE OF CONTENTS

<b>Editorial:</b>	To Experiment With Hardwood .....	733
On the Road to Harmony .....	New Machine for Making Board .....	738
Square Cornered Molecules .....	Planting 10,000,000 Trees in Massachusetts ..	738
Not the Same Concern .....	<b>News of the Industry:</b>	
Cobwebs .....	British Wood Pulp Association General	
<b>Special Articles:</b>	Meeting .....	723
Sulphite Waste Liquor Utilization .....	Kaministiquia Pulp and Paper Building ..	724
Roofing Problem for Paper Mills Solved by	Canadians at London Conference .....	724
Gypsum Slab .....	The Situation in Belgium .....	725
Technical Section .....	United States Notes .....	731
<b>Miscellaneous Information:</b>	Pulp and Paper News .....	732
Annual Forest Growth Misrepresented .....	France Prohibits Imports of Newsprint and	
B. K. Sandwell to Lecture at McGill .....	Pulp .....	733
Chemical Show Will Interest Paper Men ..	Canadian Price Suits U. S. Publishers .....	733
What is Dry Rot? .....	Wayagamack's Machines Delayed .....	733
More About the Paper Yarn Machine .....	March Exports of Pulp and Paper .....	738
Poplar for Pennsylvania .....	<b>The Markets:</b>	
Water Power Commission Approved .....	Canadian Trade Conditions .....	734
Laurentide Leads the League .....	New York Markets .....	731

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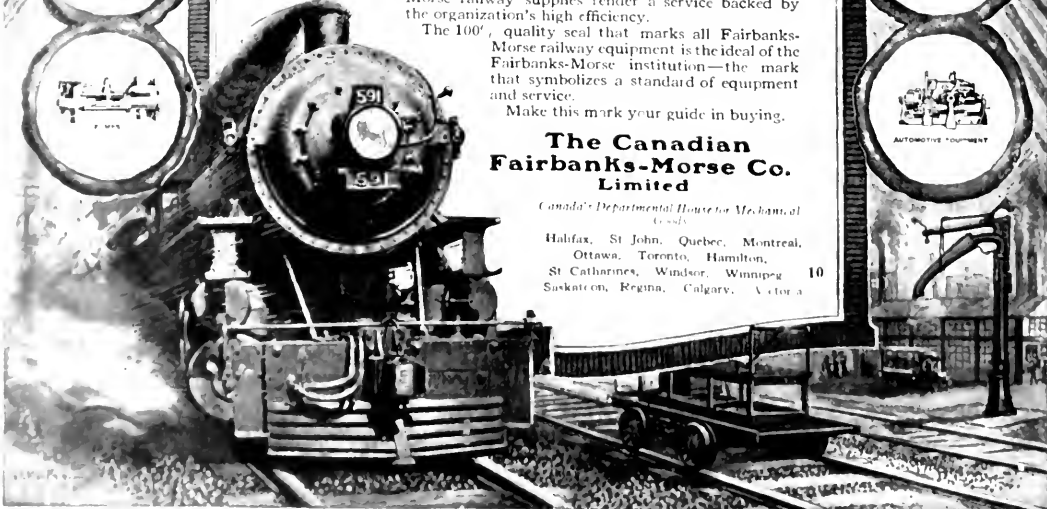
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## EDITORIAL

*ON THE ROAD TO HARMONY.*

Summer skies look brighter to the publishers of western Canada and newsprint manufacturers are breathing more easily than for some time past. A conference was in session at Ottawa to devise a better way of assuring the newspapers of a supply of paper than by enacting legislation which would be like the down of a dandelion—no one could predict where it would land. Relations between publishers and paper makers had been more than strained for many months, though both sides individually have been hoping for a peaceful understanding. Important matters, which should have been arranged by personal intercourse were delegated to committees and lawyers. A committee cannot speak from intimate knowledge for each person he represents, and a lawyer may, and often does, argue all around the point that should be made. When a deal is on that means the establishing of business—friendly business—relations, the individuals should come into personal contact.

The Pulp and Paper Industry has been proud of John R. Booth for many years, and now, in his 94th year, he is to be thanked for solving the problem that threatened seriously to embarrass the industry. With much public sympathy for the western publishers aroused by editorials and news items, the Federal Government seemed on the point of passing a most unfortunate piece of proposed legislation. With a production of 800,000 tons of newsprint from Canadian mills, a larger proportion, some say 25 per cent., of Canada's newspapers said they could not get paper. All they needed was about 2,750 tons. Mr. Booth saw the solution and offered to underwrite the supply of half the amount required if other mills would guarantee the other half. This was readily agreed to and the air was cleared. Details may take a little time to work out, but the great point arrived at is the realization that the manufacturers meant what they said last December by the statement that Canadian publishers would be taken care of. Confidence has been restored, good-will will come.

The trouble seems to have been largely due to two causes, lack of personal contact, as mentioned, and reliance by the western publishers on a single mill for supply, assuming that the Government would see them through. It is reasonably certain that if these publishers had got into direct contact with other possible sources of supply last fall, or even this spring,

a lot of worry and hard feeling would have been avoided. Now that the two parties are getting into direct contact and the publishers are visiting the mills and making personal arrangements, they find the paper men are really fine fellows—and the publishers are, too. A better feeling is already becoming evident. The paper maker would be a fool to throw down his home market and neglect the needs of his fellow-countryman. He wants to see the publishing business in a flourishing condition. The Pulp and Paper Magazine has consistently emphasized this point and it is now very gratifying indeed to see that the publishers are beginning to realize it also and that friendly relations are growing.

*SQUARE CORNERED MOLECULES.*

One of the strangest true stories that we have heard in some time was told at the summer meeting of the Technical Section. It seems that an oil salesman visited a pulp mill and in praising the quality of his oil to the superintendent remarked that the oils which were being used were decidedly inferior because in one of them the molecules were of cubical shape (and he drew a picture to show the form), while the other was not quite so bad as the molecules were pyramids, (and he drew another sketch), but that the oil which he was selling was far superior to any other on the market because the molecules were **round**. In fact the salesman, by misrepresenting something with which the superintendent was not at all familiar, convinced him that he was selling a ball bearing oil and consequently the best possible kind of lubricant. The curious part of this story is that we repeated it last week at the smoker of the American Society of Chemical Engineers and one of the gentlemen present was the chief chemist at the mill where the incident occurred and had overheard the conversation between the oil salesman and the superintendent. Another chemist from the same mill was also present and vouched for the truth of the story, else we would be strongly inclined to doubt it.

The superintendent in this case was not acquainted with even the rudiments of every day science and the salesman knew it. If the chemist had not been present, the wonderful new conception of the molecular state of lubricants would have been lost to the world, and this particular mill might have been induced to purchase a really inferior grade of oil, because a con-

cern that permits its salesmen so grossly to misrepresent either his own product or that of others is not likely to be depended upon for a first class article. It is not necessary for a man to have a college education or to be an expert chemist or engineer to have a clear conception of such elementary science as would enable him to detect such misrepresentations and to perceive the principal qualifications of the materials required in his department. The man on the job must be depended upon for considerable advice in the purchase of materials unless the concern has a large technical staff which can carry out performance tests for the benefit of the purchasing and cost departments.

Correct and accurate observation of conditions and results and the making of accurate records of quality and performance are of the greatest value in the economical operation of a pulp and paper mill. A foreman or superintendent cannot be expected to do this work properly unless he has a pretty fair knowledge of elementary science and mathematics.

The editor of this magazine happens also to be the editor of the text book which the Pulp and Paper Associations are preparing. In the examination of these elementary subjects, mathematics, physics, mechanics, electricity and chemistry it has been difficult to decide where to draw the line on the inclusion of a number of subjects. Incidents of the kind just mentioned, although fortunately not of the same character, have been convincing of the need of providing the man in the mill who has not had a high school education with information that will prevent him from making foolish and costly blunders, and enable him to co-operate intelligently with the management of a mill which desires to conduct its business along modern scientific lines. The man who does not know something which he has obtained more by study than by hearsay of these elementary subjects cannot ordinarily appreciate what is meant by accuracy in observation, adjustment or record. The successful mill of today and more particularly the successful mill of tomorrow must be operated on accurate knowledge. It is a waste of money to install a cost system when the quality of materials going into an order is not known more closely than the number of boxes of thirds and blues and hard shavings, and laps of pulp. The cost of these items cannot be ascertained unless a record is kept from accurate measurements of the quantities used and lost in course of treatment.

Most paper mills are careful of their buying and most managements are on the lookout for new materials which will do the work as well or better and cost less than those employed. In many cases it is not possible to tell how well a new article will work until it is tried out under working conditions. There are, however, many materials which can be inspected in the laboratory or simply examined carefully and intelligently and sized up as to their desirability in the mill.

Such an examination must be based on scientific knowledge and this can be obtained only by study. Such knowledge is neither cheap nor easy of attainment but it is distinctly worth while as a possession.

#### *NOT THE SAME CONCERN.*

Considerable dust, we might say saw-dust, has been raised in Ontario on account of the investigation into the records of the cut of timber from Crown lands. One of the principal offenders according to reports is a lumber company called Spanish River Lumber Company. Another company of a similar name has been largely before the public lately because of the extent of its developments and the excellent reputation its stock is acquiring. This is the Spanish River Pulp and Paper Mills Limited, which operates pulp and paper mills at Sault Ste. Marie, Espanola and Sturgeon Falls, Ontario. This company as well as the one which is before the courts has leases of large tracts of Crown land timber. On investigation we have been assured that there is absolutely no connection between the managements of these two concerns whose names are unfortunately so similar. We take occasion to mention this matter as there is likely to creep into the public mind a suspicion of the integrity of one of the largest companies of our industry and one which is most careful to do what is right. Our industry has already had enough undeserved criticism without adding to it.

#### *COBWEBS.*

We have lost a good friend and the pulp and paper industry has lost a strong, enthusiastic and high-minded supporter in the death of George C. Sherman, of Watertown, N.Y.

The misleading colloquialism, calling pulpwood "pulp" is unfortunately too commonly used by people who really know better, and, finding its way into the papers often creates a wrong impression.

The recent visits of American editors and chemical engineers to Canada included trips of inspection to pulp and paper mills. There is close connection in both cases with our industry.

In the program of the visit of the American Institute of Chemical Engineers to the E. B. Eddy and Co. plant, we note that the visitors saw the process of "decorating" the wood. Luckily we have a dictionary.

Canadians will be affected by the proposed scheme of taxing profits on business done in England in paper and pulp from countries outside the Empire. The proposition is a general one, applying to all foreign business and is being vigorously protested as will be seen in the account on another page of the British Wood Pulp Association.

# Sulphite Waste Liquor Utilization\*

RALPH H. MCKEE, Ph.D., Columbia University,  
New York City.

Two cords of wood require as cooking liquor about 2,200 gallons of the solution of calcium bisulphite and sulphurous acid, and give one ton pulp. On the completion of the cook the waste liquor is ordinarily drawn off, and is run into the adjacent river, to the injury of the river life. In other words, half of the wood goes to make paper pulp and half is dissolved by the cooking liquor and discarded into the river. The total solids of the waste sulphite liquor average about 10 per cent, the principal portion being a calcium ligno-sulphonate produced by the solvent action of the cooking liquor on the lignin materials which bind together the cellulose fibres of the wood. This waste liquor also carries a small percentage of sugar. The amount of this sugar, apparently dextrose and fructose, varies from 1.5 to 3 per cent, depending on the temperature at which the wood chips have been cooked.

The utilization of this liquor in the United States is being hastened by legislation forbidding sulphite waste liquor being dumped into the water courses. The States of Pennsylvania and Wisconsin have already passed such laws and there is similar legislation before Congress at Washington. So far as I know, none of the Federal or Provincial governments in Canada have as yet taken action, but one cannot tell how long they will continue to hold off.

For over half a century attempts have been made to utilize this sugar for the commercial production of alcohol. It is only in the last ten years that methods have been worked out which successfully accomplish this.

One method is to heat the sulphite waste liquor with slime sludge or lime, filter off or decant from the precipitated calcium sulphate and calcium sulphite, and ferment the resulting filtrate, after the addition of yeast and yeast foods. The alcohol obtained on distillation of the fermented liquor carries a small percentage of wood alcohol (up to 3 per cent) and minor percentages of other materials which, though small in amount, are sufficient to prevent the sale of the alcohol as alcohol of the highest grade, unless exceptional care is taken in the distillation. In 1918 this process, known as the lime or Ekstrom process, was used in Norway and Sweden by fifteen plants; in Germany and Austria by twelve plants; and in the United States, by one plant. The yields of alcohol by this process are generally lower than would correspond to the sugar content of the sulphite waste liquor. The explanation commonly given of the low yield is that it is due to the effect, in the neutralization step, of a local excess of lime on the sugar, it being well known that hexose sugars are readily destroyed by alkalis. The total production of alcohol from sulphite waste liquor in the above mentioned countries in 1918 was approximately 6,000,000 gallons, most of it being used as automobile fuel. In the United States the process just described has not

preven to be especially profitable, partly because of the low yields and partly because of the high installation cost and the extreme care and skill required in its operation.

The second process arose about two years ago, due to certain experimental work, carried out in the chemical engineering laboratories at Columbia University, which showed that the common belief that sulphur dioxide and sulphites are poisonous to the yeast organism is incorrect. That these do prevent the growth of the yeast organism in many liquors is true; but our evidence is that this is due to the fact that they are reducing agents and use up the dissolved oxygen of the liquor rather than that they have any direct action on the yeast organism. If this explanation is true, then by bubbling oxygen or air through the liquor the effect of the sulphur dioxide and sulphites, when present in but moderate amounts, should be balanced; and actually this was found to be true. Sulphite waste liquor, from which a portion of the free sulphur dioxide has been removed, ferments readily and rapidly in the presence of yeast and a current of air. If the sulphite liquor is used without the removal of a portion of sulphur dioxide, fermentation will ordinarily take place, but the speed will be slow. It is better to remove the excess of sulphur dioxide by steaming the liquor for a time. The process has been carried out, not only in the laboratory using a few liters, but, through the courtesy of the Hammernill Paper Co., Erie, Pa., on small commercial units. Our first fermentations at the Hammernill plant were on 300 gallon charges, and later we used 13,000 gallon charges. We installed a commercial size still, capable of handling 200 gallons of 95 per cent alcohol a day, and proved that there were no complications in the distillation of the alcohol formed in the sulphite liquor by the new process.

As carried out by the new process, the liquor after removal of the alcohol, is essentially free from sugars and sulphurous acid, and accordingly is a product of a less obnoxious character if run into the water course. Later it will be shown it can be evaporated and used as fuel with advantage. As by-products of the alcohol process there are obtained, some sulphur dioxide in a form ready to be used in the pulp mill acid system, considerable hot distilled water for use as boiler feed (30,000 lbs. at 212 deg. per hour for a 100 ton pulp plant), and much warm water for use in washing pulp, instead of using cold water. In calculating costs of alcohol manufacture (see tables) no credit is given for any of these by-products.

In the method of carrying out the new alcohol process most efficiently, the sulphite waste liquor is in one step evaporated to approximately half its volume. If this liquor, after distilling off its alcohol content, is concentrated to 30 deg. Be, i.e., a liquor of 50 per cent solids content, it can then be burned in a properly designed boiler plant, by means of the ordinary form of oil burner, in which oil is sprayed into the furnace. This will give us for a 100 ton pulp mill, about 1,000 H.P. per 24 hours as power; besides approximately one and a half times the amount of low

\*Paper presented at the summer meeting of the Technical Section of the Canadian Pulp & Paper Association, Sault Ste. Marie, June 23, 1920.

pressure steam required for the evaporation, in triple effect evaporators of the waste liquor left after the alcohol distillation, to the 50 per cent solids content liquor ready to be burned under the boilers.

The amount of waste sulphite liquor commercially available, using the ordinary type of blow pit and washing by displacement has been shown by tests conducted at the plant of the Hammermill Paper Co., Erie, Pa., to be, on an average, 1930 U.S. gallons per ton of pulp. In other words, actual tests have shown the previously used figures of 1,200 to 1,600 U.S. gallons per ton of pulp to be too low an estimate.

#### Method of Operation.

The detailed method of operation is as follows: The hot waste sulphite liquor draining off from the wood pulp in the digester blow pit is run into a desulphurizing column about 16 feet high, where it meets a counter current of steam and has the larger part of its sulphur dioxide removed. The sulphur dioxide recovered in this way is taken to the absorption towers to be used in the manufacture of fresh cooking acid.

The hot desulphurized liquor is next evaporated to approximately half its volume in a thermo-compressor type of evaporator. The choice of this type of evaporator is determined by the fact that the sulphite waste liquor is essentially a colloid and accordingly boils at approximately 212° F., even when partially concentrated. This makes evaporation of such a material very cheap and requires but a small installation expense. The liquor as it comes from the desulphurizing tower may be fermented without evaporation, but to do so means doubling the capacity of the fermentation tanks and the building containing them, and is not wise from a financial point of view.

The hot liquor is next cooled counter currently with water. The warm water thus produced has decided advantages over cold water in the pulp mill in the washing of pulp. The sulphite waste liquor at about 29° C. is run into the fermentation tank and hydrolyzed yeast, ammonium sulphate and calcium acid phosphate added as yeast foods along with the yeast. A slow current of air is introduced through pipes leading to the bottom of the tank. The air current serves the double purpose of furnishing the required oxygen needed by the yeast, and of keeping the yeast mixed with all portions of the fermenting liquor. With fermenting liquors carrying large amounts of sugar, such as molasses, the carbon dioxide evolution is sufficient to keep the mass of the liquor stirred, but with fermenting liquor carrying only a small percentage of sugar, such as waste sulphite liquor, the carbon dioxide evolution is scarcely sufficient to keep the yeast in thorough suspension.

After 60 to 72 hours fermentation the alcohol is distilled, best in a continuous still, to give a crude alcohol, and this crude alcohol is then re-distilled in a discontinuous or batch still. On one of the upper plates of the rectifying column of the batch still, there is run a dilute solution of soda ash to neutralize the free sulphur dioxide which accompanies the alcohol during distillation.

I have carried out fermentations using samples of sulphite liquor from some fifteen mills. The yields of 95 per cent alcohol vary between 0.55 per cent and 1.35 per cent, with an average of about 1.00 per cent calculated from the volume of sulphite waste liquor.

Using the data obtained at the plant of the Hammermill Paper Co., Erie, Pa., in our fermentation and distillation of charges of 13,000 gallons of sulphite

waste liquor, I give in Table No. 1, the costs of producing alcohol for a hundred ton sulphite pulp mill. The percentage of alcohol given is 1 per cent, though the percentage obtained in the experimental work, using the 13,000 gallon charges mentioned before, was 1.07 per cent. The costs, moreover, have been increased to what I believe to be average Canadian costs.

TABLE I.—Cost of 95% Alcohol.

Basis of 100 tons sulphite mill, 300-day year, 1,930 U.S. gallons of waste sulphite liquor, per ton of pulp made:

A.—POWER:			
Evaporation, desulphurization,			
	416 BHP at \$100		\$41,600
Distillation . . . . .	85 BHP at 100		8,500
Pumping . . . . .	22 BHP at 70		1,540
Air Compressor . . . . .	20 BHP at 70		1,400
			<hr/>
			\$53,010
B.—LABOR:			
Superintendent, at \$3,000 . . . . .			\$ 3,000
2 Stillmen . . . . .	65c per hour		4,680
2 Desulphurizing men . . . . .	65c "		4,680
2 Fermenting room men . . . . .	65c "		4,680
2 Laborers . . . . .	57½c "		4,140
			<hr/>
			\$21,180
C.—PLANT:			
Buildings . . . . .			\$145,000
Wood fermenting & storage tanks 11-23',			
diam. x 20' . . . . .			25,000
Stills, evaporators, desulphurizers, yeast-			
growing equipment, alcohol storage . .			177,000
Piping . . . . .			20,000
Motors and pumps . . . . .			8,000
			<hr/>
			\$375,000
D.—COST OF MANUFACTURING:			
Horse power . . . . .			\$53,040
Labor . . . . .			21,180
Yeast food . . . . .			15,000
Soda ash . . . . .			5,000
			<hr/>
			\$94,220
E.—CHARGES:			
Interest on Investment, 8% . . . . .			\$30,000
Depreciation, buildings, 5%; Mach'y, 10% .			28,500
Repairs . . . . .			11,550
			<hr/>
			\$70,080
F.—RECAPITULATION:			
Percent. of 95% alcohol on original liquor		1%	
Gallons (U.S.) 95% alcohol per year . . .			\$579,000
Cost per gal. (Item D) . . . . .			16,270
Cost per gallon (Item E.) . . . . .			12,130
Total cost per U.S. Gallon (not including			<hr/>
royalty) . . . . .			28,400

The lime process has a number of disadvantages, the principal ones of which are:

1. The high lime requirement, amounting in the case of a hundred ton plant to four tons a day, or a yearly cost of \$18,000.

2. The extra labor required to handle the incoming lime, to slake the lime and to handle the outgoing sludge.

3. The loss of sugars due to the action of the lime amounts to approximately 10%, and accordingly means

an increase of 3e a gallon in the cost of alcohol production, and a decrease in income from sales, if alcohol is sold at 60c a gallon, of \$36,000, a year.

4. Sulphite waste liquor neutralized with lime carries a cloud of suspended solids, even after settling and decantation.

5. The residual slop from the alcohol still is not in good condition to be evaporated for use as fuel.

6. Scale formation, in the case of the lime process, is very rapid in the still. I have seen gypsum scale over half an inch thick on parts of a still working under the lime process.

*Fuel Value of Residue.*

At the April meeting of the Technical Association of the American Pulp & Paper Industry in New York, there was presented a paper on Fuel from Sulphite Liquor (published in Convention number of paper). Making use of the great advances of the last few years in boiler design and boiler practice and the burning of powdered coal and of oil and using the data regarding concentrated waste sulphite liquor in the paper referred to, we have as the simple and desirable way to utilize the waste liquor after the distillation of the alcohol, its utilization as fuel.

When this residual sulphite liquor is evaporated we have the residual showing on a dry basis for a typical liquor at heat value of 7,950 B.T.U. per pound, ash 13.9 per cent. The sulphur content of the residue is 5.4 per cent and of the resulting ash 1.9 per cent. For each ton of pulp there is obtained, after having had the alcohol removed, about 1,100 gals.—9,900 lbs. containing 14 per cent solids—1,386 lbs. To concentrate to 50 per cent solids will require the removal of 7,128 lbs. water, with formation of a mobile pitch of 50 per cent solids weighing 2,772 lbs.

B.T.U. developed by burning 1,386 lbs. of fuel of 7,950 B.T.U. ....	11,018,700
B.T.U. required to drive off 1,386 lbs. of water:	
127,512 and 1,344,420 B.T.U. (raising temperature and vaporizing) .....	1,471,932
<hr/> Theoretically available B.T.U. ....	<hr/> 9,546,768

This is equivalent to 682 lbs. coal, 14,000 B.T.U., per ton of pulp made, or 34.1 short tons per day for a 100 ton pulp mill.

If this sulphite pitch is burned under a boiler to give steam of 150 lbs. gauge pressure, there will be obtained a boiler efficiency varying between 60 and 80 per cent, according to the design of the boiler and its firebox. If 60 per cent, then per ton of pulp there will be obtained from water at 120° F.:

$$\frac{60 \times 9,546,768}{1,107} = 5174 \text{ lbs. steam at 150 lbs. pressure.}$$

If 80 per cent, then—

$$\frac{80 \times 9,546,768}{1,107} = 6899 \text{ lbs. steam at 150 lbs. pressure.}$$

We may use the steam generated for the development of power in non-condensing steam engines. The exhaust steam of such engines could be used to evaporate the liquor in multiple effect evaporators. On the basis of this system we have the following:

On the basis of this system we have the following:

A simple non-condensing Corliss engine, using steam of 150 lbs. pressure, has a steam consumption of about 25 lbs. per indicated horse power. Therefore from our steam we get,

$$\frac{5174}{24 \times 25} = 8.6 \text{ I.H.P. per day of 24 hours per ton pulp.}$$

$$\frac{6899}{24 \times 25} = 11.5 \text{ I.H.P. per day of 24 hours per ton pulp.}$$

The steam exhaust from this type of engine is at a pressure of 3 to 5 lbs. per square inch, and is about 88 per cent dry. Assuming that owing to pipe condensation and other heat losses it delivers but 75 per cent of the theory to the evaporators.

$$\text{At 60 per cent boiler efficiency we have } 5174 \times .88 \times .75 = 3411 \text{ lbs. steam per ton pulp.}$$

$$\text{At 80 per cent efficiency we have, } 6899 \times .88 \times .75 = 4553 \text{ lbs. steam per ton pulp.}$$

To evaporate the 1,100 gallons to 50 per cent solids, as calculated, will require the evaporation of 7128 lbs. of water. A triple effect evaporator of ordinary type will evaporate this amount of water if furnished 2651 lbs. steam (or a quadruple effect with 1967 lbs. steam).

If boiler has 60 per cent efficiency then we have per ton of pulp an excess of steam above the requirements of the triple effect evaporator of 3413 — 2651 = 763 lbs.

If boiler has 80 per cent, efficiency 4553 — 2651 = 1902 lbs. Or, in other words, for a 100 ton pulp plant, the fuel available will give, in addition to the energy required for the evaporation of the slop from the alcohol still to a concentration adapted to be burned from a nozzle, such as is used for burning fuel oil, the following:

If the boiler has a fuel efficiency of 60 per cent, 860 H.P. per 24 hour day and 76,300 lbs. low pressure steam.

If the boiler has a fuel efficiency of 80 per cent, 1150 H.P. per 24 hour day and 130,200 lbs. low pressure steam.

Investment required to carry through this fuel economy:—

Triple effect evaporator to evaporate 30,000 lbs. water an hour installed .....	\$75,000
Boiler 1,000 H.P. installed .....	10,000
<hr/>	<hr/>
15 per cent depreciation and repairs per year .....	17,250
Labor, 2 × 24 × .65c × 300 days .....	9,360
<hr/>	<hr/>
Yearly cost of operation .....	\$26,610

With H.P. year \$100 and coal \$8 ton the income is as follows:

<i>If boiler has 60% efficiency—</i>	
860 H.P. has a year value of .....	\$86,000
76,300 lbs. steam at 3 lbs. coal at \$8 .....	5,232
<hr/>	<hr/>
Cost of operation .....	26,610
<hr/>	<hr/>
Yearly credit value .....	\$64,622

At 80% boiler efficiency—	
1150 H.P. at 8100 H.P. year . . . . .	\$115,000
190200 lbs. steam at 3 lbs. coal at \$8 ton. . . . .	13,040
	— — —
	\$128,040
	26,610
	—————
Yearly credit value . . . . .	\$101,430

If these credit values be credited against the alcohol cost, we have credits of 11.1c per gallon of alcohol if a boiler efficiency of 60 per cent is obtained, or 17.3c per gallon of alcohol if a boiler efficiency of 80 per cent is obtained. This leaves net alcohol costs per gallon of 95 per cent alcohol of 17.3c, or 11.1c in the two cases.

*Note*.—The discussion of this paper will appear as soon as available.

### ANNUAL FOREST GROWTH MISREPRESENTED.

In the following letter to the Pulp & Paper Magazine, Mr. Barnjum takes exception to certain statements of Col. Haskell of the International Paper Co:

I notice that the rate of annual growth in our forests must be increasing quite rapidly, as in the issue of the Pulp and Paper Magazine of May 13th, the Vice-President of the International Paper Co. claimed a 4 per cent growth, while in the issue of May 27th he claims it to be 11 3/7 per cent, and that there may be no misunderstanding in connection with these figures, I will quote his statement verbatim:

"As to the 'four per cent increment,' I desire to quote from the Ninth Annual Report of the Commission of Conservation of Ottawa and from Professor C. D. Howe of the Faculty of Forestry, University of Toronto, in his monograph entitled 'Forest Regeneration on Certain Cutover Pulpwood Lands in Quebec.' In this brochure on page ten he states as his conclusion from exhaustive studies made in the St. Maurice Valley, it would take 70 years for a spruce tree, 4 inches in diameter, to attain a diameter of 12 inches.

"Let us see exactly what this means in growth percentage. A block of spruce one foot long and 4 inches in diameter contains 150.8 cubic inches. A block of spruce one foot long and 12 inches in diameter contains 1,357.2 cubic inches. Therefore in 70 years a foot section of a 4 inch spruce tree would gain 1,206.1 cubic inches in attaining a diameter of 12 inches.

"This is an increase in the 70 years of 800 per cent, or an annual average increase of 11 3/7 per cent per annum. And in considering this astoundingly large percentage of annual growth, it must be remembered that this is simply circumferential growth, and takes no account whatsoever of altitudinous increment."

The International Paper Company must be very short of wood when it becomes necessary to grow trees at such a rapid rate.

It is much to be regretted that pulp cannot be manufactured from fine theories. If it could be, there would certainly be no shortage of paper today, but we are faced with a condition and not a theory. The figures quoted by this official of the International Paper Company are the very best evidence that there is possibly no net annual growth in our much abused forests as they exist today, for if there were an 11 per cent growth, a 4 per cent or even a 1 per cent net growth, there would be more standing wood on the

Quebec leased lands today than there ever was, as the annual cut on these lands is only 2,000,000 cords, or less than 1 per cent of the stand of 224,000,000 cords, as quoted by this official.

I am not vouching for any of the above figures except the annual cut, which is correct. I am merely using his own figures to show that his contention that there is a net annual growth is ridiculous. When the cut only amounts to less than one per cent of the stand of timber and still our supply is diminishing, so very much more than this amount every year, how can there be any net growth?

The fallacy of the contention that there is any such amount of growth lies in a fact that should be perfectly plain to any school boy. We might just as well contend that each child that is born lives to the age of three score years and ten, in which case the world would be as densely populated with human beings as the vice-president of the International Paper Company would have it covered with trees.

If anyone questions the rapidity with which our supply of timber is diminishing, I would ask why it is that some of the larger operators are now cutting in such remote sections that it takes two years to drive their logs to the mills, and why it is that limits have advanced in price from, say, \$100 per square mile to \$3,500 per square mile? Why pulpwood has advanced from \$3.00 per cord to \$30 and more, f.o.b.? Why fee land has advanced from \$1.00 per acre to \$10, \$15 or \$30 and over? Also why the size of logs has dropped from six or seven down to sixty or seventy to the thousand feet, and why they are shipping wood out of the country by rail that runs in size from four or five inches down to 1 1/2 inches in diameter, mere poles that have only just begun to grow? Also why are all the larger paper companies in Canada planting seedlings in a large way as fast as they possibly can?

With the above cold facts staring us in the face it must of course, be perfectly apparent to any man of ordinary intelligence that any claim made as to a net annual growth is simply a "delusion," and the greatest satisfaction we have in this connection is in the knowledge that all of the people cannot be fooled all of the time.

FRANK J. D. BARNJUM.

Annapolis Royal, N.S.

June 25th, 1920.

### B. K. SANDWELL TO LECTURE AT MCGILL.

McGill University has appointed B. K. Sandwell, editor of "The Canadian Bookman" and "The Journal of Commerce," which are also published by the Educational and Industrial Press, and well-known as a public speaker in Montreal and other cities, to an assistant professorship in the Department of Economics and Political Science. Mr. Sandwell has, for some years, delivered lectures in both extension and regular student courses in the University. He is known to the public through both publications of which he is editor and also through the lectures ranging in theme from literature and writers to points of economic interest and importance, which he has given on many occasions not only in Montreal, but in other Canadian cities, and at the Alexander Hamilton Institute in New York.

Paper enters largely into the construction of every Korean house. The interior is lined with paper. It has a paper roof, paper floor cloth and paper walls.

# Roofing Problem for Paper Mills Solved by Gypsum Slab\*

By H. S. TAYLOR,

Chief Engineer, Management Engineering and Development Co.

Of the many problems that confront the designing engineer in the pulp and paper industry, that of roofing for the different buildings included in the modern paper mill is an important one. This problem is of special importance in machine rooms, pulp mills, beater rooms, recovery plants, or in any other department where excessive evaporation is a part of the processes carried on as the roof slab, of whatever material it may be, is subjected on the under side to the action of a volume of air laden with moisture to the point of saturation requiring but the slightest lowering of temperature to reach its dew point, and deposit condensation on all parts of the roof structure with the resultant drip that is so commonly found in paper mills.

From the above we can readily see perhaps the most important reason why the engineer is confronted with the problem of roofing, namely, condensation of water from the vapors within the room. As condensation on any surface is caused by a differential of temperature between the surface and the vapor in contact with it, the colder the climate in which the mill is situated, the more important the problem of covering becomes; in fact, for mills in our southern states we might say that almost any structure that offers protection from the elements will do, but for the northern states and Canada, protection is but a minor factor.

Having named condensation as the most important cause of the problem of roofing, let us state the two causes of annoyance and expense to the operator:—First, the deposit on the surface of the roof structure, and second, drip therefrom to the floors and machinery below. The first has a corrosive or rotting effect on the structure itself and the second is of great inconvenience to the operator.

It is therefore the aim of the engineer to remove all water from the building in the form of saturated vapors and thus eliminate condensation. This removal is a problem of ventilation and not roofing, but it is mentioned lest any conclusion be drawn that an economical roof structure could be designed that would have sufficient insulation effect to prevent condensation on its under surface without the mechanical removal of the surrounding vapors and replacement with dry air. The problem is to prevent condensation by the removal of vapors before reaching the dew point, and the replacement under roof with dry air of a temperature that will prevent condensation. Each heat unit that passes through the roof slab must be replaced and as each unit of replacement represents a unit of cost to the operator, a material of low conductivity for roof slab will show a direct saving in fuel in proportion to the degree of conductivity.

Even with the most efficient system of ventilation condensation, to a certain degree, will take place at

certain temperatures, and the roof structure become laden with a deposit of water. If this structure is made up of a material that will become saturated, corrosion, rotting or other deterioration will take place and the life of the structure is dependent on its rate of corrosion or decay. A material must therefore be selected that will either not become saturated or will show no injurious effect should such saturation take place.

We now have the two main characteristics required for roof slab. First: long life, which we will call durability, and second, conductivity. Minor characteristics such as weight, cost of placing, cost of handling, etc., must be taken into consideration, but the material selected must first answer to the durability and conductivity test.

There is one other enemy of durability, but as it attacks but one of the standard roofing materials, namely steel we will make but brief mention of it. This enemy is corrosive gases, either from sulphite mills or bleach plants. Steel encased in concrete is not protected, gases attacking the encased steel members, and for roof slab where such gases come in contact with it, material must resist the action of gases as well as condensation.

In the Spring of 1919, Col. C. H. L. Jones, manager of the Spanish River Pulp & Paper Mills, Ltd., instructed the Management Engineering and Development Company to recommend a roof slab to replace that then on the machine room of their Lake Superior Mill. This roof was put on in 1912, of 3 inch yellow pine supported on 10 x 12 inch yellow pine purlins in turn supported on steel trusses. We considered the problem on the basis of durability and low conductivity but also had to take into consideration the 18 feet spacing of roof trusses designed for a load of not over 70 lbs. per foot. The wooden sections of this structure were decayed to a point of failure seven years after placing.

It will be seen that many of the standard roofing materials must be rejected on this basis. Wood, the most common, is not durable, concrete, steel, tile, etc., have a very high conductivity, besides being of a weight that requires additional supporting members. Concrete with cork insulation on the upper surface fulfilled the first two requirements, but the cost of the structure was prohibitive, due to the high price of cork and additional supporting structure to carry the increased weight.

Wood treated with a preservative such as creosote oil of tar, etc., is being specified to some extent for roofing where condensation is extreme, and such treatment doubles or even trebles the life of the structure but a thorough treatment is very costly, as such plank and timber must be dried out, otherwise bleeding will take place and the drip of the preservative is certain to cause loss in production besides being exceedingly disagreeable. One of the chief objections to such a structure is the fire risk, for the treated wood is

\*Address at the summer meeting of the Technical Section of the Canadian Pulp and Paper Association, Sault Ste. Marie, Ont., June 23

much more inflammable, and a protest from the insurance companies against this roof material is sure to arise.

Wood roofs with air spaces or insulation layers of felt or cork have been tried out, but their life is limited, as the wood sooner or later becomes saturated with moisture giving life to the numerous species of fungi that destroy the fibre and life of the structure.

The result of a thorough investigation was the selection of gypsum for roof slab material combined with wool shavings and built up in the so-called metropolitan system of slab construction.

This monolithic gypsum composition slab has long been used for fireproof floors and roof construction in the eastern United States and Canada under the trade name "Metropolitan." Some of the oldest of the large buildings of downtown New York City are being built of this construction: 60 Wall Street, 42 Broadway, Beaver Bldg., Singer Bldg., etc., as well as hundreds of heavy manufacturing and loft buildings, apartments, hotels, residences and the like throughout the metropolitan district and in other communities. The first installation was made in 1892, and it came into extended use in 1894. During this year a gypsum roof was placed on the St. Nicholas Skating Rink. I have for your examination a piece of gypsum knocked from the underside of the floor slab of this building just above the refrigerating machinery. The steel stable reinforcement was found to be in excellent condition when exposed after 22 years. I also have for your inspection a piece of cable 23 years old, taken from the Horticultural Hall, Philadelphia.

This Metropolitan type of construction was placed on the Woronoco Mill of the Strathmore Paper Company in 1912; the Wayagamaek Pulp and Paper Company at Three Rivers made an installation in 1915; Price Brothers have this type of construction over one of their machine rooms, the roof having been laid in 1915, and the Great Northern Paper Company, of Millinocket, Me. have a gypsum slab roof which was placed in 1913. For mills of the Escanaba Paper Company at Escanaba, Michigan, designed by the Management Engineering and Development Company, gypsum roofs are on machine room, boiler house and grinder rooms and the owners are well satisfied.

The slab is designed on the catenary principle; cold drawn, twisted steel wire cables being figured to carry all the loads in suspension between beam supports. These cables are anchored to the end beams and brought into uniform deflection and tension by steel rods midway of each span.

Gypsum, more commonly called plaster of Paris, is mined as a moderately soft mineral, composed, in varying degree of purity, of hydrated calcium sulphate,  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ . When gypsum is calcined at a temperature of 100 to 120° c.,  $\frac{3}{4}$  of the water of crystallization is driven off and the product obtained is the ordinary plaster of Paris. If calcined at temperatures between 250 and 500° C. but not sufficiently long to remove all of the water, a nearly anhydrous product is obtained which also forms a cement.

The product formed, as the result of the setting in either of the above cases, is practically identical with the original gypsum. This material is appreciably soluble in water. One part of the hydrated calcium sulphate at 0° C. dissolves in 488 parts of water; at 35° in 393 parts of water; at 100° in 460 parts of water. Its maximum solubility occurs at 35° C.

The gypsum composition consisting of about 85 per

cent pure calcined gypsum mixed with wood fibre to act as a binder and to toughen the finished slab, is mixed with water to a medium working consistency and poured into the forms. The set takes place within ten or fifteen minutes, and the forms are removed the same day if desired leaving a full live load capacity slab. The duty of the gypsum is to fireproof the steel, form a flat slab, and transfer the load from the surface to the cables in direct compression. Its work is analogous to that of the stiffening truss of a suspension bridge floor, for which duty it has proved itself amply strong in various authoritative tests as well as in actual service.

The chief advantages of the construction are:—

1. *Light Weight:* Composition weighs 48 lb. cu. ft., or 16 lbs. sq. ft. for a 4-inch slab, this weight being one-third that of concrete—less than the dead load of any other permanent, fire-proof construction, and no more than the ordinary wood sheathing. This light weight means a ten to twenty per cent saving in steel framing supports, as well as reducing loads on foundations.

2. *Quick Setting of Slab:* As gypsum will set ten minutes after pouring, whereas four to ten days are necessary, depending on weather conditions, for concrete, this means a saving in interest and overhead charges by earlier completion. A full live load can be placed on the roof slab two hours after pouring, and forms are generally removed in from four to six hours. Of great interest and value in Canada, this quality permits progress in cold weather, as the slab may be placed without injury in zero temperature and below, the quick set taking place before the water can freeze.

3. *Heat Insulation:* Among the literature furnished you are copies of the report of Prof. C. L. Norton of Massachusetts Institute of Technology. This report gives the B.T.U. transmission through various constructions used for roofs, together with a chart showing the possibilities of condensation under varying conditions. You will note that with the highly insulating gypsum roof slab condensation will not occur under a very wide difference of indoor and outdoor temperatures, where the humidity is kept below 80 per cent by means of ventilation. The dollar value of an insulating roof slab like gypsum as compared with wood of two or three times the conductivity, and concrete of five times the conductivity, may be readily determined from Prof. Norton's report. One heating engineer has established a  $7\frac{1}{2}$  to 10 per cent reduction in heating equipment, and a 25 per cent annual fuel saving as compared with concrete. (These tables showed mostly relative conductivities.)

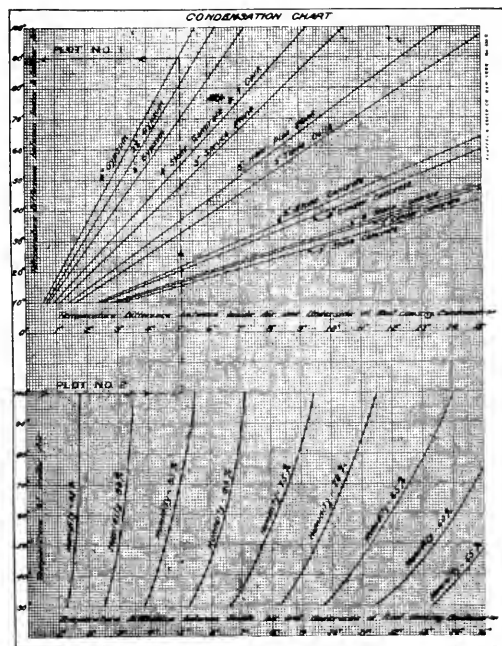
4. *Resistance to Corrosion:* Gypsum is calcium sulphate and, being a salt of sulphuric acid, is not affected by any acids of this group. Beaker tests show corrosion by nitric and hydrochloric acids, but concentrations of these acids in a building are very rarely sufficient to affect a roof slab of gypsum. The same may be said of the strong alkalis, soda ash and caustic soda. In floors twenty years old, the steel has been found perfectly preserved by the embedding gypsum.

5. The fire resistive qualities of gypsum have been proved by many authoritative tests and fire experiences. In 1911 a fire occurred in the Knickerbocker Storage Warehouse, Newark, N. J.—an eight-story building with monolithic gypsum floors and roofs erected about 1900. The five floors were packed to



the ceilings with furniture, and the fire raged over a period of eleven hours. The records of insurance and other inspections show the building was repaired and the floors restored, with the exception of two panels, by being plastered underneath with gypsum, the building then being used as a storage warehouse. The low cost of salvage is very apparent.

Fire, load and water tests have been conducted under the auspices of different cities and institutions, viz.: New York City, Boston, Montreal, Toronto, Philadelphia and Boston Underwriters' Laboratories.



In New York, the test was conducted under the supervision of Stevensen Constable, Superintendent of Buildings, in 1897, before the establishment of standard specifications for the floor tests by the American Society for Testing Materials and the National Board of Fire Underwriters. The duration of fire in the test was five hours at an average of 1900° F., the slab carrying the live load capacity 150 lbs. per sq. ft. After applying a 60 lb. fire hose stream for ten minutes, the load was increased to 600 lbs. per sq. ft. without failure. Since 1897 the construction has been approved as standard, first class fireproofing in New York City, other cities following this lead after submission of records of this severe test.

Gypsum slab was placed over the Lake Superior Paper Company's Sault Ste. Marie mill in the summer of 1919. Since then a new machine room at Espanola and a machine room at Sturgeon Falls have been covered. A second machine room at Sturgeon Falls is now being constructed and will be covered with gypsum roofing. The roof has a pleasing appearance and is guaranteed for a period of ten years. This guarantee appears to be perfectly safe when considering the time this type of roof has remained in perfect condition on buildings constructed many years ago.

Other types of gypsum roofs will be found on many paper mill structures, the gypsum channel type and also pre-cast type. The channel type is made up in 8 ft. lengths, laid on steel supporting members and joints cemented. It has a pleasing appearance, but as reinforcement is not continuous there is a tendency to deflect under extreme heat. No doubt this deflection is aided by moisture. The pre-cast type we have not had experience with. The Thorold Mill of the Ontario Pulp & Paper Company is covered with this type of construction, but for mills that we have been interested in, the cost of pre-cast was greater than the monolithic slab, due to handling charges. I believe this Metropolitan type of roof construction ideal for machine rooms, grinder rooms, recovery plants, sulphite mills or for almost any paper mill building, as at the present time it is very little more expensive than wood, and from all indications will outlast wood many times over.

For a new mill the labor of placing a gypsum roof is very little more than that of placing a standard wooden roof, but for mills in operation a replacement entails great precautions. If properly planned and carried out, however, operation may be carried on without interruption. As an example of this statement we can take the Lake Superior Paper Company's machine room, a building 180 ft. x 270 ft., where the removal of their wooden roof and the placing of the new gypsum slab was carried on without an hour's shutdown of four paper machines running beneath.

For roofs over machine rooms, grinder rooms or other buildings, wherein moisture is excessive, all steel members directly embedded in the roof slab should be insulated by gypsum covering throughout their entire surface, as, due to their high conductivity, low temperatures will be conducted to sections on the under side of the roof and on these sections condensation will form, with the resultant drip.

I have a number of slides showing methods of placing and field details of this gypsum construction that may be of interest to you. They were furnished by the Lathrop Hoge Company.

(Note: The Management Engineering and Development Co. has designed and perfected the proper truss for this type of roof. Ed.)

- 1—Spanish River P. & P. Co., machine room, Soo, Ontario. Rotting of 3 in. spruce planks after seven years. Replaced with gypsum, 1919.
- 2—Firms in place, cable installed, and being brought into defection between the purlins. American Radiator Co., Buffalo, with Packard Motor Co., in distance.
- 3—Soo Mill replacement 1919. Buying cables and smoothing gypsum.
- 4—Cables in place and slab being poured. Note mixing and handling is all done at the spot to be poured on account of quick setting. Note also, defection of cables.
- 5—Pouring slab on saw tooth. Gypsum is immediately trowelled into place. Jones and Lamson plant, Springfield, Vt., machine shops, 10 foot spans.
- 6—Soo Mill replacement, 1919. Mixing gypsum.
- 7—Soo Mill replacement, 1919. Pouring slab.
- 8—Soo Mill replacement, 1919. Under side of finished roof and top of false roof.
- 9—Soo Mill replacement, 1919. Under side of finished roof.
- 10—11—Soo Mill Replacement, 1919. Partly completed.
- 12—Curb of monitor monolithic with the slab.

13. Soo Mill replacement, 1919. Finished roof and monitor.
14. Sawtooth showing completed slab and vertical ends of gypsum blocks. The heating engineers reduced the equipment bid by \$10,000, and estimated a fuel saving of \$200 per month, when gypsum was adopted instead of concrete by the Scovill Mfg. Co., Waterbury, Conn., owners.
15. General view of one building of Scovill plant 300 ft. x 900 ft. roofed with gypsum.
16. Power house, Amsterdam, N.Y. Gypsum slab replacing corrugated iron. Waterproofing being installed.
17. Floors, forms and cables in place ready for pouring. Note electrical conduits. Note also forms for next floor are hung. No shores are necessary owing to light weight.
18. Floors, works completed, showing slab, beams and grinders, Pine Arts Bldg., Rochester, N.Y.
19. Silk Mill, Philadelphia, Pa. 4-in. slab on 9-ft. spans between trusses. Here humidity is introduced and maintained, so elimination of condensation is of vital importance.
20. Farrel Foundry and Machinery Co., Ansonia, Conn. Machine shop built in 1915.
21. Bristol Brass Co., Bristol, Conn., 1915. Three feet of snow in valleys.
22. Blue Bonnets Key Club Grandstand, Montreal, Gypsum roof 1915.
23. Dominion Power & Transmission Co., East End steam plant, Hamilton, Ont. Elimination of condensation of vital importance. Gypsum roof used instead of concrete, and yielding same insulation of cork, but eliminating its cost.
24. Wayagamack Pulp & Paper Co., Three Rivers, P.Q. Sulphate recovery building—1916.
25. Strathmore Paper Co., Woronoco, Mass., completed machine room 1912.

#### CHEMICAL SHOW WILL INTEREST PAPER MEN

Returning to New York City after an absence of a year last year's exposition was held in Chicago—the Sixth National Chemical Exposition of Chemical Industries will open in Grand Central Palace, Sept. 20, and continue until Sept. 25, inclusive. The expansion in the industry, as shown by the increased number of exhibitors, necessitates the use of four floors of the Palace. Total applications for space up to June 30, were 358, which is a new record. In Chicago last year there were 351 exhibitors, while at the previous New York Show in 1918, the number was 334. In Chicago last year the records showed that more than 111,000 had seen the exposition.

Two new sections will feature the exposition this year. These are the Fuel Economy Section and the Materials Handling Section. Both are considered very important. Fuel Economy section will embrace exhibits of machinery and apparatus, furnaces, producers, stokers and all devices for the economic utilization, or more efficient combustion of fuel. The constantly mounting cost of fuel as well as its increasing scarcity makes enlightenment on these vital subjects necessary.

In the Material Handling Section will be series of exhibits showing machinery and equipment for the handling of material such as: conveying, transporting, excavating and included will be weighing, measuring and power transmission equipment. Practically every industry in some phase of its operations must

convey its products in some manner. There is a shortage of man power, and when available man power demands a high wage. In the meantime the manufacturer must handle his raw material, material in process of manufacture, and the finished product. It is expected that the Materials Handling Section will impress with its features showing that machinery not only means economy, but also increased efficiency.

The business side of the exposition will have many interesting phases. These include sessions on subjects which will be developed in the two new sections of the exposition, and sessions on chemical engineering for which elaborate programs have been planned. Motion pictures which will have keen interest for technical men will be part of the program, and there will also be addresses for the education of the public.

#### WHAT IS DRY ROT?

You're welcome.

The Pulp and Paper Magazine will have a booth.

The term "dry rot," the U.S. Forest Products Laboratory finds, is applied by many persons to any decay which is found in wood in a comparatively dry situation. Thus loosely used, the term actually includes all decay in wood, since wood kept sufficiently wet can not decay.

In the more limited sense in which pathologists use the term, "dry rot" applies only to the work of a certain house fungus called *Merulius lacrymans*. This fungus gains its distinction from the fact that it is frequently found growing in timbers without any apparent moisture supply; in reality it does not grow without moisture, and is as powerless as any other fungus to infect thoroughly dry wood. Given moist wood in which to germinate, it is able to make its way a surprisingly long distance in dry timbers, drawing the water it needs from the moist wood through a conduit systems of slender, minutely-porous strands.

Wood in the typical advanced stage of dry rot is shriveled, yellow to brown in color, and filled with radial and longitudinal shrinkage cracks, roughly forming cubes. In many instances these cracks are filled with a white felt mass, the interwoven strands of the fungus. The decayed wood is so brittle and friable that it can easily be crushed into powder.

The dry rot fungus is active in nearly every region of this country, in Canada, and in Europe. It is very destructive to factory and house timbers and to logs in storage. Coniferous or soft woods are more commonly infected by it than hardwoods.

#### BRITISH VIEW OF NEWS PRINT PRICES.

A few American publishers have of late bought in the principal mills of Canada in some cases to such an extent that they have practically secured control of these mills, says the World's Paper Trade Review. It is not only the rise in wages which accounts for the increase in prices. There has been another factor.

The newspapers of the United States and Canada have had fifteen months, since the armistice, in fact—of the most wonderful development in advertising that has ever taken place in the whole history of the two countries. The demand for publicity has in fact been insatiable.

The papers, in consequence, have increased in size until the bulk of them was only limited by mechanical capacity. The result has been a consumption of paper from 15, 20 and up to 30 per cent, over the highest ever recorded.

## BRITISH WOOD PULP ASSOCIATION.

### Seventeenth General Meeting Convened.—A Post-War Dinner.—Riordon Company's Sources of Spruce and Pine.—Prices Discussed.

(From Our London Correspondent.)

London, 17 June, 1920.—This week the members of the British Wood Pulp Association held their seventeenth general meeting and at night the first post-war dinner was held. Unfortunately many old and familiar faces were absent from the two functions, but there was a sprinkling of new blood to be seen round the tables and the business element, apart from the humorous side, proved most interesting, questions of great importance being handled with remarkable ability and lucidness.

The British Wood Pulp Association can now boast of a shrewd, business-like and clever President. He is Mr. L. P. Andrews, of Andrews & Co., Ltd., London, pulp agents. Those Canadians who have had the pleasure of meeting Mr. Andrews know his kindly and gentlemanly disposition, and in business matters he is just as precise and discretionary as he is in social life. Therefore, it was a pleasure to see the honor conferred upon him this week of being elected to preside over the deliberations and give a guiding hand in the near future to the pulp men, who are faced with a serious crisis in regard to taxation of foreign manufactures.

On taking the President's chair, vacated by Mr. Nicol, Mr. Andrews met with a great reception. In a few words he referred to the services rendered in the past to pulp men by Capt. Parthington, Mr. Frank Lloyd, and Mr. Albert E. Reed. As one of the founders of the Association and its first Secretary, Mr. Andrews naturally emphasized the fact that he had the objects and interests of the Association at heart and was prepared to take the "oath of allegiance."

Business was then proceeded with and the first item was to raise the subscription to the Association. It was increased from £225 to £335 from January 1st, 1920.

#### Taxing the Foreigners' Products.

A very debatable and serious question for British wood pulp men was raised by the President under the Finance Act. It referred to taxation of products of foreign manufacturers through agents in England and the Wood Pulp Association would have to tackle the subject. Mr. Andrews explained that under the Act a return would have to be made of all profits made in the United Kingdom by a foreign company through an agency, failing which there was a severe penalty. He was called upon to make this return, and, of course, he could not do it. It cost him a considerable sum in legal expenses until the London Chamber of Commerce stepped in and for the time being the matter was allowed to be quiescent. Mr. Andrews remarked that he could not understand the British Government promoting this idea. If they wanted to tax the foreigner they should come into the open and put on an import duty. The foreigner did it that way to Britishers. It was a roundabout way of getting at the foreigner, but the foreigner would retaliate and the moment the law was passed in England a similar law would be passed in Scandinavia. The matter was also serious for exporters and there was only one way out of it and that was, protest from all directions.

From the foregoing special of Mr. Andrews it will be realized that British pulp agents for mills in Scan-

dinavia, U. S. A., Finland and Germany are up against a big proposition thrust upon them by a Government that must find money at all costs to pay for the war expenses. Canadians would do well to watch this new law, if it should ever become one. It comes under the Finance Act and relates to Corporation Tax. Within two months English agents of foreign mills must make a return of all foreign company profits. As a matter of fact it is a factor in promoting trading "within the Empire."

Mr. Nicol explained to the meeting that Norwegians are very perturbed about the Government's proposals and were anxious to protect themselves. They had obtained Counsel's opinion and it agreed with what Mr. Andrews had told them at that meeting. This new Act provided that statistics would have to be shown giving the profits made by their foreign friends and their shipments to this country and it would be impossible to produce such statistics.

Mr. Douch mentioned that probably they might get out of the difficulty by becoming merchants.

The President remarked that they would have to pay £500 fine for trying to avoid payment if they became merchants.

It was eventually agreed to work in conjunction with the London Chamber of Commerce to fight the Act and any new information would be circulated among members of the Association.

#### The Annual Dinner.

In the evening the members of the Association and a large number of paper mill men sat down to dinner at Prince's Restaurant. The attendance included Scandinavians, Mr. T. J. Stevenson of the Riordon Sales Company, Limited, Montreal and the Agent General for Quebec, Mr. L. P. Andrews presided at the dinner. It is six years since the last Wood Pulp Dinner was held, prior to which the social function was the most successful and most pronounced event in British commercial circles.

After the loyal toasts had been honored, the President submitted "the Paper Trade" and referred to services pulp and paper men had rendered in the war and on the battlefields. "The Canadian pulp and paper mills," he added, "were also largely represented on the battlefields and I desire to include all those who served in the toast."

Mr. Joseph Dixon, Oughtbridge Paper Mill, with which he has been connected since 1871, replied to the toast and remarked that he was father of the newsprint trade, being the oldest member in the room that night who made it. He recollected receiving in 1871 his first order for 2,000 reams of newsprint at 9 cents a pound and recalled the periods of prosperity during the wars of different countries since 1870. Amid loud laughter, Mr. Dixon announced that he felt he was in the lion's den that night and he knew all about the efforts the wood pulp men were making to keep prices down. They had made a good show and hoped they would press those endeavors.

Mr. W. C. Powers, on behalf of British papermen overseas also responded and said the paper men's troubles were not over yet, at least in the newsprint section, but they would face them with courage and overcome them.

"The Guests" was proposed by Mr. S. Nicol and he extended a cordial greeting to the Canadian, Amer-

ican and Scandinavian pulp and paper men who were present. To the Scandinavians he would say: continue your wood pulp supplies and continue to give aid. To their Trans-Atlantic friends they extended a very warm welcome, because, they saw from their horizon a way of hope, perhaps indicative of the panacea for some of the difficulties now besetting the paper trade. To Trans-Atlantic countries they were looking for raw materials knowing that increased production and decreased cost would make an appeal to every thinking man.

#### "The Guests."

Lord Riddell ("News of the World", London) replying for "The Guests" said he did not deny that the newspaper trade was prosperous, but it was obvious that to pay present prices for paper it would be a practical impossibility for a newspaper to continue under existing conditions. He did not think present prices were going to last. Papermakers had been passing through a period of unexampled prosperity and he hoped they would continue. He had no doubt the wood pulp trade would attract a great deal more capital and a great deal more wood pulp be manufactured and new and improved methods discovered. He could imagine, therefore, prices of pulp falling, while, at the same time, their profits would not fall in the same proportion. Certainly it was not the profits from wood pulp that consumers objected to, but the price; as they had yet to discover how much of the price was represented by profit and how much by raw material.

#### Consul-General Eckell, Norway, also responded.

Mr. T. J. Stevenson, Riordon Sales Co., Ltd., Montreal, also expressed thanks for the way the toast of "The Guests" had been received and said Canada was a country of great promise to the Empire in the matter of paper and pulp. During the war it had been his pleasure to assist in some measure in supplying raw materials and he hoped he would be able to do so still more in the future, because his company now owned the largest timber resources of any pulp and paper company in the world, and it had recently added to its resources 10,000 square miles of spruce and fine land in the Dominion of Canada which would be at the disposal of the world's paper industry in the future. Since his visit to England he had derived much pleasure and he was delighted to be present at the British Wood Pulp Association dinner and meet so many pulp and paper men. He wished them all success.

#### "The President."

Mr. Nils Leander submitted the health of "The President" and said Mr. Andrews always played the game. He was the senior pulp man in that country and he was held in the highest esteem in pulp and paper circles.

The company rose and sang "He's a jolly good fellow."

Mr. Andrews suitably acknowledged the toast and thanked the dinner committee for their excellent arrangements.

During the evening an excellent musical program was enjoyed.

Little jams of freight-cars,  
Little strikes at docks,  
Swerve the nation's business  
Swiftly toward the rocks.  
Boston Herald

#### KAMINISTIQUIA PULP AND PAPER BUILDING.

On Wednesday, June 30, the Parks Board of Port Arthur, Ontario, completed the details of a lease of a part of the shore portion of the park to the Kaminstiquia Pulp and Paper Co., with head offices at Toronto, for the purpose of locating a thirty ton dry ground wood pulp mill. The lease was forwarded to Toronto for ratification by the company and that for-pulp industry turning out 250 tons per day.

Under the terms of the lease the company secures sixteen acres of land and water, and will at once proceed with the erection of the first unit of the mill. Ultimately the industry will develop into a pulp and Paper industry turning out 250 tons per day.

The company has secured extensive pulpwood limits, but will purchase wood in the open market, thus becoming a second local industry to which farmers and settlers may dispose of the wood they cut in clearing land.

Machinery for the first unit has been purchased and will be on the ground by the time the buildings are ready to receive it. The initial expenditure will be upwards of \$500,000. Orders will be placed for the building of paper machines, but, owing to the crowded condition of the mills, it is not likely that the machinery can be laid down under eighteen months and possibly two years.

The firm of C. D. Howe and Co. has been retained as consulting engineers and Mr. Howe expresses the opinion that the mill will be producing pulp before the first of December of this year.

Included in the directorate of the company are some of the leading pulp and paper men of Canada and the United States, but the financing is being carried out in Toronto.

The coming of this mill to Port Arthur is the outcome of negotiations put under way by Mr. J. F. Hewitson, of that city, who succeeded in interesting Eastern people in his project.

Under the terms of the lease the company secures sixteen acres of land and water, in return for which the Parks Board will receive an annual rental of \$1,000. The company secures no concessions in the way of exemptions or special concessions. It pays all taxes and other rates, and becomes purchaser of a minimum of 2,000 horse power of electric energy, which will ultimately reach proportions of 12,500 horse power when the full development of the industry takes place.

This arrangement secures the city very considerable addition to its tax paying industries and brings before others seeking sites for pulp or paper mills the facilities offered by the Head of the Lakes.

#### CANADIANS AT LONDON CONFERENCE.

A number of Canadian foresters are now in London, attending the Imperial Forestry Conference. Among those representing the Dominion are Clyde Leavitt, chief forester for the Commission or Conservation; Ellwood Wilson, chief forester for the Laurentide Company and member of the executive committees of Quebec Forest Protective Associations; Avila Bedard of the Quebec Forest Service; M. A. Grainger, chief forester of the British Columbia Forest Branch; E. H. Finlayson, of the Dominion Forestry Branch; Dr. C. B. Smith of the New Brunswick Forest Service; Robson Black, secretary of the Canadian Forestry Association and editor of the Canadian Forestry Journal; and Gen. J. R. White, chairman of the Woodlands Section of the Canadian Pulp and Paper Association.

# The Situation in Belgium

(By Special Correspondence).

Belgium, June 7th 1920.

Nearly twenty months ago, after the armistice prospects were very bad for the Belgium paper industry. Except a few mills that had been working under control of the "Papier L' entrale," practically all the paper mills were in a most piteous state. Raw materials, brass and copper parts, sundry machinery, rubber rolls of paper machines, even paper machines, nothing had escaped the rapacity of the "Beschlagnahmestellen" and had been sent by lots to Germany.

The "Papeteries Anversoises," for instance, lost in this manner two modern paper machines, one of them of a width of 158 ins. At the De Noeyer Pulp and Paper Mill, not less than a 110 in. paper machine, 80 tons of brass and copper and 250 tons of lead were taken away.

On the other hand it caused some uneasiness that the big profits which the Scandinavian mills had been making during the war, had served for important portions to consolidate their financial situation, and to improve and expand their plants. The possibility was feared that they might have been in a privileged position to export at relatively low prices.

If, furthermore we consider that even yet, it takes here still several months to get delivery of the most elementary articles as brass and copper parts, felts, belts and the like, it is not to be wondered that under these circumstances, in most of the mills operations were only started in February-March 1919.

Many machines started on news, using as raw material printed matter, pamphlets and railway tickets left behind by the Germans in their numerous offices.

Pulp was imported from Norway, Sweden and Holland in gradually increasing quantities. Small lots of paper followed. The imports and exports for the first four months of the years 1919 and 1920 are compared in the following tables.

Before the war the average production of the Belgian Paper Mills was 110,000 tons per year. The exports per year amounted to 55-60,00 tons, including, however, a certain quantity of imported special papers as photographic papers and art papers.

About the middle of the year 1919, the average price of sulphite pulp was 1 fr. per kg. F.o.b. Antwerp. Supplies were far below the demand and contrary to what had been expected prices kept on rising, owing largely to the high freight and the unfavorable rate of exchange.

At present operations for Antwerp are as follows:

Mechanical . . . . .	2.10—2.40 fr. per kg.
Sulphite, strong unbleached. . . . .	2.50—2.70 " " "
Sulphite, easy bleaching. . . . .	3.00—3.25 " " "
Sulphite, bleached. . . . .	4.00—4.80 " " "
Kraft . . . . .	2.25

There is but one pulp mill in Belgium. Operations were resumed early in 1919, but owing to shortage of pulpwood and lack of machinery its present output amounts only to about 50 per cent of its normal output, which before the war was around 80 tons, sulphite and sulphate, per day, so that its production helps our paper industry but to a small amount.

The continued high cost of living obliged our paper mills also, to meet conditions by important increase in wages, with the result that today in Belgian paper mills, wages are 400 per cent higher than they were before the war.

The prices of paper kept advancing accordingly and have reached today an extraordinary level.

	Fr. per kg.
News is selling at present at . . . . .	3.50
Imitation parchment, bleached. . . . .	6.00—6.50
Imitation parchment, unbleached. . . . .	4.50—5.00
Grease proof . . . . .	6.00—7.00

These very high prices are compensating in a certain way for the reduced output, and some mills lately paid dividends of 20 per cent and more.

The situation, however, seems to have reached its

Articles	Origin (Imports)		Destination (Exports)		Four First Months of the Years 1919 and 1920			
	Destination (Exports)		Origin (Imports)		Quantities in Kg.		Quantities in Kg.	
	1919	1920	1919	1920	1919	1920	1919	1920
<b>Wood Pulp—</b>								
Germany . . . . .	301,052	269,806					200,386	
Canada . . . . .		214,797						
United States . . . . .		48,482						
Hamburg . . . . .							5,107,836	
France . . . . .							50,537	
Spain . . . . .								
Norway . . . . .	3,372,429	21,883,743						
Holland . . . . .	3,759,837	248,841						
Sweden . . . . .	2,164,422	10,469,882						
Other Countries . . . . .		488,927						
<b>Total</b> . . . . .	<b>9,597,740</b>	<b>33,624,478</b>					<b>5,358,759</b>	
<b>Total for the whole year</b> . . . . .	<b>54,979,061</b>						<b>1,437,313</b>	
<b>News print Paper—</b>								
Germany . . . . .	19,364	6,100						
England . . . . .	939,072							
Holland . . . . .	1,750,475	1,756,940						
Other Countries . . . . .	408,725	197,087					5,134	1,000
<b>Total</b> . . . . .	<b>3,117,636</b>	<b>1,960,127</b>					<b>5,134</b>	<b>1,150</b>
<b>Total for the whole year</b> . . . . .	<b>8,153,775</b>						<b>99,801</b>	

## Non-Denominated Paper—

Belgian Congo .....			2,430	24,971
Germany .....	49,773	2,128,899		69,668
Argentina .....		6		20,885
Australia .....				7,191
Brazil .....				2,118
Canada .....		15,411		55,195
China .....				341
Denmark .....		2,688		15,149
Egypt .....				60,898
Spain .....	505			4,951
United States .....	921	158,100		63,498
France .....	179,792	692,432	3,500	1,931,738
England .....	442,037	1,722,281	57,518	1,301,385
Greece .....				22,738
Hamburg .....		4,777		
British India .....				46,869
Dutch India .....				389
Ireland .....				90,138
Japan .....		1,534		59,675
Norway .....	182,467	755,274		25,374
Holland .....	681,163	1,081,814	9,243	368,507
Russia .....				359
Sweden .....	128,856	448,714		18,811
Switzerland .....	1,021	22,883	10,217	66,664
Tunis .....				2,110
Turkey .....				22,024
South Africa .....				1,177
Uragway .....				754
Other Countries .....	183	103,545	38,573	86,648
Total .....	1,666,724	6,338,358	121,481	4,369,858
Total of the whole year .....	10,307,017		3,471,557	

## Boards—

Germany .....		246,911		
France .....	1,596	47,696		20,005
England .....	153,269	116,736		62,996
Hamburg .....		16,000		
Norway .....	50,000	32,563		
Holland .....	393,800	543,622		3,731
Sweden .....	5,044	54,901		
Other Countries .....		310,611		6,520
Total .....	558,709	1,349,040		93,252
Total of the whole year .....	4,514,823		52,075	

climax. The general improvements of the cost of living is announced from all countries has had its counterpart here. A certain meanness is reigning in all

trades. Orders are retained and in some instances cancelled and the immediate future might hold some unexpected surprises. —Belgique.

**MORE ABOUT THE PAPER YARN MACHINE.**

Toronto, June 22nd, 1920.

To the Editor of Pulp and Paper Magazine.

The article in your journal of May 13, signed by The Textile Engineering Co. Ltd., in reference to our patents and the operation of our twine machines must have caused considerable amusement to your readers. There is no question that this article was decidedly garbled and twisted and caused amusement to myself and associates. If, however, your contributor is interested we should be pleased to show him the machine in actual operation. They may be the holders, as they state, of valuable patents for the manufacture of twine from paper, if so, they could not have been used in the manufacture of any product that, so far, has come into our hands as the twines that have come

to our attention have the appearance of crudity, decidedly inferior to what we intend marketing. We hold the basic patent for the manufacture of twine from paper, in one operation, in multiple, and waterproofed, and if we can place any reliance on the information we have been able to procure, we present a radical change in the manufacture of twine from paper.

I would have written you sooner but your article was but recently drawn to my attention, having been on an extended trip.

Yours truly,

International Paper Products, Ltd.

P. R. HOAD,

President.

### NEWSPRINT PAPER REVIEW FOR MAY.

The following is a condensed review of the reports received by the Federal Trade Commission from domestic manufacturers of newsprint paper, from jobbers buying and selling newsprint paper and from leading publishers using newsprint paper. Import and export statistics of the Department of Commerce are also included in the review. Whenever possible the figures for 1920 are compared with those for the corresponding period of 1919.

The average or normal production of total print and standard news based upon the total combined production for the years 1917, 1918, and 1919 amounted to 108,400 tons of total print and 97,500 tons of standard news for a period corresponding to May. The actual production amounted to 129,230 tons of total print of more than 19 per cent over the average for the three-year period and an increase in the case of standard news of more than 22 per cent over the average.

The increase in the production of newsprint in May 1920 over May 1919 amounted to more than 22 per cent for total print or more than 24 per cent for standard news. The production of newsprint in May 1919 was affected to a marked degree by the labor situation.

Mill stocks of both total print and standard news increased during May, 1920.

Reports from 92 mills operating 197 machines running full or partial time on newsprint paper showed the loss of time during the month of May, 1920, to have been 822 hours for lack of labor, 667 hours for lack of power, 470 hours for repairs, and 14 hours for other reasons.

The total time the machines were idle decreased 3, 157 hours over that shown in April. No lost time due to lack of orders or lack of coal was reported by newsprint mills.

#### Imports and Exports.

The imports and exports of printing paper not dutiable (practically all newsprint) and of wood pulp for the month of April 1920 compared with the month of April 1919 were as follows:—

	April 1920.	April 1919.
	Net tons	Net tons
Imports of newsprint (total) . . . . .	60,098	44,427
From Canada . . . . .	57,305	44,427
From Sweden . . . . .	1,412	0
From Norway . . . . .	1,265	0
Exports of newsprint (total) . . . . .	3,068	8,294
To Argentina . . . . .	1,061	1,136
To China . . . . .	521	0
To Cuba . . . . .	338	861
To France . . . . .	59	2,258
To other countries . . . . .	1,089	4,039
Imports of ground wood pulp (total) . . . . .	9,416	9,714
Imports of chemical wood pulp (total) . . . . .	36,033	15,029
Unbleached sulphite . . . . .	16,614	6,942
Bleached sulphite . . . . .	10,028	556
Unbleached sulphate . . . . .	8,151	7,310
Bleached sulphate . . . . .	1,240	221
Exports of domestic wood pulp . . . . .	2,776	3,592

The imports of newsprint for April 1920 were 15, 672 tons more than for April 1919. The exports for April 1920 were 5,226 tons less than for April 1919.

The tonnage to "Other countries" under the "Exports of Newsprint" for April 1920 includes 286 tons to Uruguay, 120 tons to Brazil, 122 tons to Canada, and 188 tons to the Philippine Islands.

The imports of mechanically ground wood pulp for April 1920 were 298 tons less than for April, 1919. The exports of domestic wood pulp were 816 tons less than for April 1919.

The imports of Chemical Wood Pulp (total) for April 1920 were 21,004 greater than for April 1919.

#### Jobbers' and Publishers' Tonnage.

Stocks of rolls in the hands of jobbers at the end of May were 6 tons more than the stocks in the hands of the same jobbers at the beginning of the month. Stocks of sheets were 127 tons less at the end of May than at the beginning of the month. The net decrease in the total stocks of newsprint in the hands of jobbers at the end of May amounted to 121 tons.

Commitments to sell roll news were 3,893 tons greater than commitments to buy. Commitments to sell sheet news were 1,174 tons less than commitments to buy. Total commitments to sell both rolls and sheets were 2,719 tons greater than commitments to buy.

Publishers' stocks increased 5,578 tons during the month. The average daily tonnage used during May was slightly less than the average used in April.

Publishers' stocks and transit tonnage on May 31, represented slightly more than 35 days' supply at the rate of consumption.

Sixty nine publishing concerns held about 59 per cent of the tonnage on hand at the end of the month.

The domestic consumption of standard news by metropolitan dailies being between one-half and three-fourths of a million tons annually increased almost 3 per cent for May, 1920, over May 1919, and more than 11 per cent for May 1920, over May, 1918.

#### Average Prices Paid by Publishers.

The weighted average price of contract deliveries from domestic mills to publishers during May, 1920, f.o.b. mill in carload lots for standard news in rolls, was \$1,673 per 100 pounds. This weighted average is based upon May deliveries of approximately 51,000 tons on contracts involving a total tonnage of more than one-half million tons of undelivered paper manufactured in the United States.

The weighted average contract price based on deliveries from Canadian mills of more than 25,000 tons of standard roll news in carload lots, f.o.b. mill in May, 1920, was \$4,157 per 100 pounds. This weighted average is based upon the May deliveries on contracts involving more than 300,000 tons of undelivered Canadian paper. The greater number of these are short term contracts covering the year 1920.

The weighted average market price for May of standard roll news in carload lots f.o.b. mill based upon domestic purchases totaling more than 7,900 tons was \$9,905 per 100 pounds.

Deliveries of newsprint tonnage from both United States and Canadian mills on contracts at \$4.50 per 100 pounds and less f.o.b. mill were heavier than usual in May. The contract tonnage delivered through jobbers was less.

Two small chaps were boasting about their relatives. "My father," said one, "has a wooden leg." "Huh," scoffed the other, "that's nothing at all. My sister has a cedar chest."



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A.13. French colonial plants suitable for papermaking.** Prof. Heim, A. Crolard, and L. Matrod. *Papeterie*, 42, 247-60, (Mar. 25, 1920). A detailed outline of the scope of the researches which should be carried out to determine the suitability of the French colonial plants for papermaking, including economic factors, laboratory tests, and semi-commercial tests. (Part of this art. was published in *Chimie & Industrie*, 2, 1247-51, (1919). See *Pulp and Paper*, 18, 355, (1920); *Paper*, 26, 154, (1920).—A.P.C.

**A.3. Palmetto leaves for paper pulp.** London Board of Trade J., Jan. 1, 1920; *Paper*, 26, 58, (1920). Palmetto leaves yield fiber, paper pulp, tannin, gallic acid, alcohol, fecula, fuel, and cattle fodder. The pulp is more easily produced than esparto and requires only  $\frac{1}{2}$  the quantity of NaOH, but the yield is only 28 per cent against 40 per cent for esparto. Palmetto pulp is easily bleached, supple, and fibrous; it felts well and can be made into very thin sheets, giving a good quality of paper, equal, if not superior to esparto paper.—A.P.C.

**A.12. Alum testing.** P. W. Codwise. *Paper*, 26, 187-9, (1920). The following rapid determination of Al<sub>2</sub>O<sub>3</sub> is proposed as being suitable for technical purposes:—In a 100 cc. beaker, dissolve a sample equivalent to about 40 cc. of 0.1 N NaOH in exactly 25 cc. of distilled water, heat to a boil, and add 1 drop of a 1 per cent alcoholic soln. of phenolphthalein. Place the beaker on a piece of white paper, add 10 cc. 0.1 N NaOH from a burette, heat to a boil and boil with stirring for exactly 1 min., add 10 more cc. NaOH and repeat the boiling as before, do this again a third time, add NaOH until a slight pink tinge is produced, boil for 60 sec., and add NaOH cautiously until a distinct pink permanent on boiling for 1 min. is produced. The end point is taken 2 drops beyond the first permanent pink tint. Free acidity should be tested for in the sample, and if found determined quantitatively and its equivalent deducted from the first titration. The various factors influencing the accuracy of the results are discussed and it is shown that with proper precautions the method is quite accurate and can be very quickly carried out.—A.P.C.

**A.15. General exposition of cellulose.** C. F. Cross. *Paper*, 26, 191-2, (1920). Summary of the Cantor Lectures before the Royal Soc. of Arts, Feb. and March, 1920.—A.P.C.

**A.16. Acid-resisting metals.** C. Matignon, Professeur au Collège de France. *Chimie & Industrie*, 2, 1281-92, Nov. Dec. 1919. A study of non-malleable acid-resisting metals, which are ferro-silicous, contg. about 14.7 per cent Si, varying proportions of Mn, C, P, S, and at times small amts. of Ni or Al, and which are known under the trade names of ironac, duriron, tantiron, etc. The relation bet. compn. and physical properties of a pure alloy of Fe and Si is first discussed and then the com. products are considered. Fe and Si form 2 stable compts., Fe<sub>2</sub>Si and FeSi. The existence of Fe<sub>3</sub>Si, Fe<sub>2</sub>Si<sub>2</sub>, FeSi<sub>2</sub>, and FeSi<sub>3</sub> has not been definitely established. As the proportion of Si in the

alloy increases, 2 eutectoids are formed—Fe<sub>2</sub>Si, FeSi (22 per cent Si), m.p. 1233°C, and FeSi, Si (60.7 per cent Si), m.p. 1245°C. The density and electrical cond. decrease as the Si content increases; and the hardness has a max. value at about 7.5 per cent Si, but for high percentages of Si the hardness is greatly affected by the conditions of cooling. The magnetic properties decrease with decrease in the Fe content, and the curve exhibits 2 very sudden drops in the neighborhood of Si = 20 per cent and Si = 33 per cent; i.e., for compts. corresponding to Fe<sub>2</sub>Si and FeSi. At room temp. 10 per cent HCl, HNO<sub>3</sub> and H<sub>2</sub>SO<sub>4</sub> readily attack the alloy for percentages of Si up to 12. From 12-3 per cent the action falls off very rapidly, becomes a min. at about 16.8 per cent, and tends to increase slightly at about 19 per cent. The 3 acids all act in about the same manner. For industrial purposes only alloys containing about 15-20 per cent Si need be considered owing to mechanical difficulties arising from the use of a greater proportion of Si. Com. products always contain varying amts. of C, Mn, P, and S, and the above results are not strictly applicable to them. Detailed results of expts. on the resistance of com. products to the action of various acids are given for—"mottillure" (French), "élanite I", "élanite II" (Italian), "ironac" and "tantiron" (English), "duriron" (American). The processes of manuf. of articles from ferro-silicon have been kept secret so that definite details are not easily obtainable. Generally speaking, a ferro-silicon containing either about 25 per cent or 70.5 per cent Si is added to molten cast iron, either in a cupola or in an electric furnace, in such amt. as to obtain the desired Si content in the finished product. Many precautions must be taken owing to the peculiar properties of the alloy, and the best results are obtained by as complete elimination as possible of impurities, especially S and P, leaving small amts. of C and Mn. This may entail the use of reducing metals during fusion and pouring. The properties, advantages, and uses of articles made of ferro-silicon are discussed.—A.P.C.

**A.18. Chemicals used in papermaking.** J. N. Stephenson. *J. of Commerce; Paper*, 26, 148, (1920). A very brief outline of the various chemicals used in the pulp and paper industries.—A.P.C.

**F.4. Theory of the preparation and recovery of soda liquors.** Cellulophile. *Papeterie*, 42, 107-12, (Feb. 10), 151-6, (Feb. 25), 208-11, (Mar. 10, 1920). A description of the methods commercially employed for the preparation and recovery of soda and sulfate liquors and of the chemical reactions involved.—A.P.C.

**H.5. Technical discussions of paper subjects;—bleaching.** *Paper*, 26, 17-52, (1920). An account of the discussions on Cl bleaching by the Holyoke Section of the TAPPI during the winter sessions. J. A. Kienle reviewed the pioneer work done by the Electro Bleaching Gas Co. in evolving a process for the utilization of liquid Cl in bleaching in the textile and pulp and paper industries, and stated that the co. was only too willing to meet the pulp and paper men



halfway to fulfill their requirements. M. S. Tiernan spoke of the app. devised by Wallace and Tiernan Co. Inc., for feeding and measuring liquid Cl. Dr. John C. Baker explained the theory of bleaching by liquid Cl as compared with chloride of lime bleaching, and outlined the means that had been taken to overcome the various difficulties that had cropped up from time to time.—A.P.C.

**K-6. Treatment of esparto.** (Dubrot process). H. F. Papeterie, 42, 203-7, (Mar. 10, 1920). The treatment of esparto for isolating the fibers consists in hydrolysing the non-cellulose materials so as to obtain the cellulose in as pure a state as possible. This may be accomplished either chemically or bacteriologically. **Bacillus amylobacter** and **granulobacter pectinovorum** under favorable conditions readily attack the incrusting and agglutinating matters and attack the cellulose only after practically all of the other materials have been destroyed. The cryptogam **macrophoma macrochloe** also acts very energetically, especially in fresh water, its action being retarded in salt water. The Dubrot process is a mixed electrochemical and bacteriological process possessing the great advantage that it can be carried out in very hard, or even in sea water. By suitable variations in the treatment it can be made to yield either finished pulp or an unfinished pulp which will keep indefinitely in a dry state. A.P.C.

**K-2. Theory and practice of the recovery of paper-making materials in the waste water of paper mills.** R.B. Papeterie, 42, 50-60, (January 25, 1920), 98-107 (February 10, 1920), 146-51 (February 25, 1920), 194-203, (March 10, 1920). The amount of materials lost in the back water is very variable; it may reach as high as 16 per cent of fibers and 35 per cent of loading materials, calculated on the weight of the finished paper. Many factors influence the amount of loss; e.g., the nature and thickness of the paper, the speed of the machine, the treatment of the stock in the beaters, the nature of the loading materials and their preparation before incorporation with the stuff, the mesh of the wire, the degree of suction, etc. There are 2 systems of recovery—(1) complete separation of the solids suspended in the water (2) concentration of "thickening" of the water. To the first class belong the machines based on the same principle as the wet machine or cylinder machine, the usual wire being replaced by a much finer one (100-120 mesh) or by a felt, and all machines which actually filter out the suspended materials. Their drawbacks are high initial and operating costs, care required for their operation, breakdowns to which they are subject. Their main advantage is the possibility of filtering the "white water" from "brown" groundwood. To the second class belong all the machines based on the principles of sedimentation and decantation. The main differences between the various types of this class lies in the direction of water during sedimentation—vertical from bottom to top (the V. Antoine decanting app.); horizontal (the Schmidt and the Schneider apps.) vertical from top to bottom (the Donoel system). Others have been devised but are of little or no use, and have not found commercial application. The ideal apparatus must offer as great a surface as possible to the water so as to bring it as nearly to rest as is practically possible in continuous operation. It is also universally admitted that sedimentation occurs best under a certain hydrostatic head. The movement of the water at this point should be horizontal or from top

to bottom so as not to hinder the settling; and should be free from eddies. Moreover the apparatus should be simple in design so as to be easily cleaned, relatively small, cheaply installed, and should be operated automatically and practically without cost. The theory of the sedimentation of particles in water is discussed in detail from the point of view of mechanics and hydraulics; the method of calculating the proportions of the apparatus for the "thickening" of a given volume of water is described; and it is shown how the Donoel system fulfills the above requirements. A.P.C.

**K-6, 7. The use of waste paper in the manufacture of paper.** J.J. Papeterie, 42, 217-21, (Mar. 10, 1920) A list of 39 furnishes used in England for the principal kinds of paper, together with the classification of waste paper established by the British government. —A.P.C.

**K-8. Color study by German expert.** Farbenatlas; Oil, Paint & Drug Reporter, Feb. 23, 1920; Paper, 26, 189-90, (1920). Account of a lecture by Wilhelm Ostwald at the Technical High School, Dresden. A.P.C.

**K-10. Starch and starch sizing in papermaking.** John Traquair, Cellulose Co. of America, Ayer, Mass. Paper, 26, 93-6 (1920). An account of the processes of preparing starches and their use in the paper industry, with special emphasis on the advantages of feculose, an acetic acid ester of starch which contains about 3 per cent acetic acid.—A.P.C.

**K-9. Loading materials in paper.** Carl G. Schwalbe, Wochenblatt F. papierfab.; Paper, 26, 55, (1920). Loading substances may and do serve other purposes than to cheapen paper and lower its quality. They diminish the transparency, fill up the pores, and raise the printing qualities. By means of loading the paper pulp can be manufactured into a much lighter, better, and more uniformly thick sheet in all its parts. The elasticity and power to absorb printer's ink do not suffer through carefully measured additions of loading materials. It is advantageous for newsprint and writing, but should not be used for wrapping as it diminishes the toughness. According to Rohland, the fitness of a loading substance can be measured by its absorption power for organic dye-stuffs. The size of the particles and the nature of the heating have a great influence on the degree of retention. A.P.C.

#### NEW PATENTS.

**K-18. Light-weight millboards from tree barks.** O. Zimmerman, Berlin-Lichterfelde. Ger. Pat. 305,697, 16.8.17. Tree bark is ground in a kind of bone mill, beaten in a hollander, and delivered to a strainer, from which the beaten stuff, diluted with water, passes to a millboard section, on which it is worked up as the middle layer of the finished board. The bark pulp has a certain coloring power for boards made of waste papers, and yields a board of low specific gravity. —J.S.

**L-5. Wood cellulose as a substitute for cotton in chemical industries.** W. Schacht, Weissenfels, Ger. Pat. 306,366, 14.3.18. Wood cellulose prepared by any of the alkaline process is further digested by boiling with a sulphite solution. The gelatinous substances (chemicelluloses) which are present in soda-wood pulps are removed by the sulphite treatment, and a highly purified cellulose is obtained, suitable for use as a substitute for cotton in the chemical and paper making industries.—J.S.

## WOOD PULP REVIEW FOR MAY.

The Federal Trade Commission has issued some interesting figures on the wood pulp situation in the United States for May. It will be noted that production of all kinds of wood pulp but Mitscherlich has increased. Stocks on hand have also increased about 11 per cent., due largely to transportation troubles.

The following is a tabulation of the production, and stocks of finished pulp, in tons of 2,000 pounds on an air-dry basis, for May, 1920, compared with May 1919 for the operating mills. The average production is based upon the reports covering the years 1917, 1918, 1919 and the average stocks are based upon the stocks carried for the 18 months' period ended May 31, 1920:

	Number of mills	Production for month	On hand end of month
<b>Ground wood pulp:</b>			
May 1920	168	172,341	152,973
May 1919	162	144,146	192,351
Average		144,025	143,899
<b>Sulphite, News Grade:</b>			
May 1920	64	71,422	15,553
May 1919	62	52,740	26,433
Average		60,075	21,510
<b>Sulphite, Bleached:</b>			
May 1920	32	50,010	4,296
May 1919	31	39,994	16,452
Average		40,650	9,928
<b>Sulphite, Easy Bleaching:</b>			
May 1920	7	6,896	858
May 1919	8	6,421	2,919
Average		6,300	1,800
<b>Sulphite, Mitscherlich:</b>			
May 1920	7	5,338	1,805
May 1919	7	6,363	2,278
Average		6,325	1,730
<b>Sulphate Pulp:</b>			
May 1920	21	18,799	4,136
May 1919	22	12,848	8,487
Average		11,875	6,248
<b>Soda Pulp:</b>			
May 1920	27	38,243	1,146
May 1919	28	30,539	9,033
Average		30,400	6,054
<b>Other than Wood Pulp:</b>			
May 1920	5	766	109
May 1919	7	1,016	98
Average		950	175
<b>Total for all Grades:</b>			
May 1920		363,815	183,876
May 1920		291,067	258,051
Average		270,600	191,335

Total stocks of all grades of pulp in the mills on May 31 amounted to 183,876 tons. Mill stocks of ground wood pulp, easy bleaching sulphite, Mitscherlich sulphite and soda pulp increased during the month.

The wood pulp industry lost 38,858 digester or grinder hours for 106 machines in May 1920, compared with 228,857 hours for 1,106 machines in May 1919. Grinders lost 5,291 hours due to water conditions and newsprint sulphite digesters lost 780 hours due to lack of coal. Repairs' figures as the principal cause of lost time. Two mills that were not in operation in May are not included.

Comparing the stocks on hand at the domestic pulp

mills at the end of the month with their average daily production based on the reports covering the years 1917, 1918, and 1919, the figures show that:

ground wood mill stocks equal slightly less than 7 days' average output.

News grade sulphite mill stocks equal slightly less than 7 days' average output.

Bleached sulphite mill stocks equal slightly less than 3 days' average output.

Easy bleaching sulphite mill stocks equal slightly more than 3 days' average output.

Mitscherlich sulphite mill stocks equal slightly more than 7 days' average output.

Sulphate mill stocks equal slightly less than 9 days' average output.

Soda pulp mill stocks equal slightly more than 3 days' average output.

Mill stocks of "other than wood pulp" equal about 3 days' average output.

Total mill stocks of all grades equal slightly less than 15 days' average output.

## NEWS ITEMS.

Due to the keenness and initiative of J. R. Booth, the deadlock between the western publishers and their paper supply has been broken. Mr. Booth offered to under write half of the amount required by making 1,375 tons available for distribution to papers in dire need. The other half was quickly provided for by the recent conference in Ottawa and further government interference was forestalled.

One hundred and thirty members of the National Editorial Association reached Toronto on Saturday last, thus ending the fourth week of their tour. The members first struck Canada at Yarmouth, N. S. and have since visited the principal cities in the east and will now cover Western Ontario. The party were entertained by the Toronto civic authorities and were shown the big improvements that are in progress in Toronto harbor. A visit was made to Windsor this week.

It is announced that the new general board of the Presbyterian Church have decided to issue a weekly church paper and have purchased the Presbyterian and Westminster, which will be issued after July 1st by the Board of Publications under a joint committee of direction from the two boards. Rev. Dr. Robert Haddon, who has edited the Presbyterian and Westminster for the past twenty years, will serve as acting editor of the new paper, which will be issued from the office on Church Street, Toronto. A permanent editor will be appointed in the autumn.

Mr. George Erskine, Toronto representative of the George H. Mead Company Ltd., and his assistant Mr. Harvey, spent several days this week conferring with the principals of the company in Dayton, Ohio.

## MILLIONS FOR TIMBER LAND.

A deal involving 17,500 acres of timber land, with 650,000,000 feet of standing timber, concluded recently by the Crown-Williamette Paper Company, assures the latter a supply of spruce and hemlock sufficient to meet the normal capacity of its paper mills at Cumas Wash, and Oregon City for the next twenty years. The tract acquired was the property of the Hammond Lumber Company and represented the latter's entire Clatsop County holdings. The purchase price is believed to have been between \$1,500,000 and \$2,000,000.



# UNITED STATES NOTES

Having succeeded in arranging for the delivery of necessary machinery, the Union Paper Products Company, recently organized in Louisiana, will begin within a few weeks the erection of a big plant at New Orleans for the manufacture of corrugated paper boxes, both for export and domestic use. A whole city block has been acquired for the factory's site. The new company is capitalized at \$300,000,000. Sam Ohnstein, owner of the Smile Company, Inc., and secretary-treasurer of the Crescent City Cork Works, is its president. Other officers and members of the board of directors are: J. Levy, vice-president; Sidney L. Rosenbaum, secretary and treasurer; Jacob E. Hirschberg, superintendent; John Meyer, George W. Davidson, Harry Goodman and Joseph Chalona.

The Michigan division of the American Pulp and Paper Mill Superintendents' Association, at its annual meeting held during the last week in June at Kalamazoo, re-elected Edvard T. A. Coughlin president, and George H. Penntain, general superintendent of the Monarch Paper Company, secretary-treasurer. N. M. Brisbois, superintendent of the Sutherland Paper Company, was elected vice-president to succeed J. H. O'Connell. The latter, in reviewing the first year of the organization's existence and reporting on the recent annual convention of the national body at Buffalo, N.Y., said: "There are 3,000 superintendents in the United States and Canada eligible for membership in this association, and we expect to have 100 per cent presentation. During the first fiscal year this association has demonstrated its worth. We have been able to gain much valuable knowledge through contact with the other fellows and friendships have been made that will last." Among papers read at this meeting that of Mr. O. F. Swanson, general sales manager of the Pulp and Paper Trading Company, of New York city, created much discussion. Mr. Swanson declared that the company he represents has taken over the exclusive sales rights for "Buckeye" pulp, a product of the Proctor & Gamble Distributing Company. This is a pulp converted from linters and cotton hull fibre, heretofore considered as waste by the cotton oil mills of the South. This product, Mr. Swanson stated, has been tested and found perfectly suited for the manufacture of book papers, coated papers and low grades of writing papers. He concluded by saying that mills have been established at Augusta, Ga., and Memphis, Tenn., that 100 tons of dry pulp made of this refuse matter is being produced daily, and he predicted that the new cotton pulp would come to be considered one of the greatest innovations in the paper industry in years.

The Union Iron Works of Bangor, Me., has received an order for two wood pulp grinders (four pockets for grinding twenty-four inch lengths of wood for the Alaska Pulp and Paper Company, together with two wet machines. This order marks Alaska's beginning in the paper manufacturing industry, as the mill of this concern will be the first to be built in that territory. The water wheels for the plant will be fur-

nished by the Pelton Water Wheel Company of San Francisco, and will operate under a 920-foot head.

About 14,000 tons of pulp have been imported into the United States from Finland so far this year, and it is expected that a much greater amount will be received during the remainder of the year. The Finnish Cellulose Association, a combination of all the sulphite, sulphate and kraft pulp mills in Finland, the yearly capacity of which is 300,000 tons, is now marketing the greater part of its output in England and America. This includes wrapping, writing and newsprint products. With this trade increasing rapidly from month to month, Finland bids fair to become an important source of wood pulp supply for the United States. The first post-war cargo of Finnish pulp was received in the United States in May, 1919, through the Lagerloef Trading Company of New York. The shipments are made from the ports of Helsingfors, Hangö and Kotka. The latest cargo of 1,900 tons came on the steamship Panola, June 7, and was unloaded at Philadelphia. Another large shipment is on the way from Finland and a third vessel is loading on the other side.

Franklin Moon, who has been Professor of Forest Engineering at the New York State College of Forestry, Syracuse, since a few months after the founding of the institution in 1912, was recently elected dean of the college by the Board of Trustees.

George C. Sherman, president of the Taggart Paper Company and Hall, Ward & Walker, Inc., news of whose death recently came as quite a shock to his relatives and many friends, was one of the best known paper manufacturers in the United States. Mr. Sherman was rated as one of the wealthiest men in Watertown, N.Y., where his home and principal business interests were located. Born in Watertown, July 26, 1862, he entered the paper manufacturing business about 25 years ago when, with D. M. Anderson, he organized the St. Regis and Taggart paper companies. Mr. Sherman is survived by his wife, Alice Taggart Sherman, and by two sisters.

The Northern Paper Mills at Green Bay, Wis., will start early this month the construction of a wood-grinding plant to cost \$100,000. Machinery, consisting of two 15-ton magazine grinders, driven by a 2,000 horse-power motor, is now being manufactured by the Baker Manufacturing Company at Saratoga Springs, N.Y. Delivery on this equipment has been promised by late September, and it is expected that the plant will be in operation toward the end of October or early in November.

A tour of inspection as guest of the big paper manufacturers of Watertown, N.Y., was made last week by Elói Badet, a French paper maker, who arrived recently from Europe to purchase a paper trimming machine for his firm, the Papetière de la Seine which he serves in the capacity of assistant to the general manager. Mr. Badet plans to visit paper manufacturing plants in other American cities before he returns to France.

# PULP AND PAPER NEWS



In June, last year, a big paper mill in Quebec had 18 lost time accidents, due to the inexperience of new men. For half of June this year the number is only four, although the pay roll has increased from 990 to 1,100. In a bulletin to employees, the following appears: "Let us make an effort to keep the June figure down to a minimum. All our old men should make it a point and a duty to tell the new comers about the safety work accomplished at the mill, about the reduction achieved through co-operation and careful thinking, and once the pace is set by the old timers, strong believers in the welfare policy of the management, the others will follow and help achieve what was done in other mills where safety and happiness are considered to be one."

Dr. T. J. Foley has been engaged as Plant Doctor (not botanist) by the Belgo Canadian Pulp & Paper Co. Dr. Foley worked in an American factory before taking up the study of medicine at the University of Alberta. He served on a camp hospital staff during the war and then took additional studies at McGill University and did hospital work. He graduated last month with honors. Dr. Foley will have good support from the Safety Committees.

Edward Beck, in charge of publicity for the Canadian Pulp and Paper Association, is enjoying a much needed rest at Muskoka.

A recent accident report from a Canadian mill shows time lost from scalding by hot groundwood pulp, strained back, fingers pinched in calenders, leg hurt by cake of ice (accident not reported till one week after happening), and cutting finger on knife barker.

Announcement has been made by the Royal Trust Co. regarding the six per cent first mortgage Thirty-year Debentures of The E. B. Eddy Company, Limited, that debentures, numbered as follows: 11, 12, 34, 95, 102, 111, 150, 153, 191, 195, 236, 255, 261, 280, 292, 422, 430, 431, 433, 444, 484, 496, have been drawn for redemption on account of the Sinking Fund, and will be paid for on 11th September, 1920, at the office of The Royal Trust Company, 105 St. James Street, Montreal, on presentation thereof with all unmatured coupons attached, at the rate of one hundred and two and a half per cent (102½%) and accrued interest. The debentures so drawn will cease to bear interest on and after the 11th September, 1920.

Marcus Greer, of Grand Mere, set up a new record for the Beaconsfield links, when he went over the course in a rainstorm in 68. In the recent ladies tournament, Mrs. George Chaboon, Jr., also of Grand Mere, tied for sixth place in a large field after a fine contest.

The Spanish River Pulp and Paper Company has recently started a First Aid Course under the direction of Mr. Wyatt. The plan is to have at least one man from each shift in every department enroll. As soon as a large enough number enrolls, the services of one of the city doctors will be secured to give the course.

The men working on shifts during the lessons will be given the necessary time off to take the lesson, with their regular pay.

Capt. J. E. Ardron, formerly secretary-treasurer of the Canadian Export Paper Co., Limited, has been appointed treasurer of the Acadia Sugar Refining Co. The head office of this company will shortly be removed from Halifax to Montreal.

The St. Regis Paper Co. has sent ten mechanics from the Deferiet plant to Montreal. They will proceed to Osealana, Que., where the company is now installing a pulp wood preparing plant.

The company now owns a tract of 20,000 acres adjacent to the point where the mill is being erected, and a large cut of pulp wood logs is already in the river ready to be handled. Jack works, saw mill, barkers and a conveyor system are to be established at Osealana.

The logs will be drawn from the river and rossed and cut into pulp wood lengths and loaded on cars for shipment to the local mills of the company. The men just sent there from the big plant at Deferiet will assist in hastening preparations to early completion so that the wood supply may be promptly delivered here.

Figures for May show that Belgo's four machines made 5596.26 tons of newsprint paper, with an average daily production of 207.27 tons, production per inch trim 726 lbs., loss in broke 5.11 per cent, and average machine efficiency of 90.87 per cent.

Allocation certificates providing for the importation of German dyes in amounts sufficient to supply immediate requirements of individual consumers in the United States for six months are to be granted by the War Trade Board. An announcement to this effect issued last week by the board, stated that consumers desiring to get allocation certificates providing for the issuance of import licenses, must file an official form provided for that purpose. Licenses to import will be issued only when the dyes applied for are not obtainable from domestic sources on reasonable terms as to price, quality and delivery.

## POPLAR FOR PENNSYLVANIA.

North Carolina poplar trees will be planted in Pennsylvania state forests, if it is found they thrive there, to provide future relief from the newsprint famine. Gifford Pinchot, chief of Pennsylvania State forests, believes that the North Carolina poplar can be grown in the Keystone state if the right methods are applied. Two previous experiments, attempted on a commercial scale, did not prove successful. If the present experiment succeeds, a large quantity of wood for the manufacture of newsprint paper can be supplied in Pennsylvania within the next ten or twelve years. The North Carolina poplar is one of the fastest growing trees, even in the northern climate, and its texture is admirably adapted to the manufacture of pulp wood for newspaper.

**WATER POWER COMMISSION APPOINTED.**

Newton D. Baker, Secretary of War, was designated by President Wilson as chairman of the Federal Power Commission created by the recently enacted water power law. Other members of the commission named in the act are the Secretaries of the Interior and Agriculture. Mr. Baker said that half a dozen or more applications for the beginning of water power projects are awaiting action. It is said that \$1,000,000,000 is now seeking investment in water power projects.

**FRANCE PROHIBITS IMPORTS OF NEWS PRINT AND PULP.**

Washington, June 25—(By Wire)—A cablegram from Commercial Attache Huntington at Paris, dated June 21, 1920, states that a French decree of June 16, 1920, published June 19, prohibits from the date of publication the importation into France and Algeria of all news print paper and wood pulp for the manufacture of news print, except under special license from the Minister of Finance. Goods en route to France or Algeria or declared at warehouses before the publication of the decree are not subject to prohibition.

**TO EXPERIMENT WITH HARDWOOD.**

Mr. L. A. Nix, of the Laurentide Forestry Department, has just commenced an exploration trip over some company-owned territory on which there is a large quantity of hardwoods, and his report of the trip is now being prepared. It is planned, using Mr. Nix's report as a basis, to use about 1,000 cords of the hardwood for experimental purposes in the mill next winter, in the groundwood department. If the experiment results successfully and the wood can be transported to the mill without difficulty, cutting will likely begin in subsequent winters on the large hardwood holdings of the company, on which there is estimated to be about 1,000,000 cords of available timber.

**WAYAGAMACK'S MACHINES DELAYED.**

The Wayagamack Pulp and Paper Company is producing about 170 tons of sulphate or kraft pulp daily. Of this, about 70 tons is consumed by the company in the manufacture of kraft paper of which it produces some 60 to 65 tons daily, and the balance of 100 tons of sulphate pulp is exported to England, South Africa, New Zealand and Australia, etc., some even going to South America. The company is receiving from \$130 to \$140 a ton for the pulp and the price for the kraft paper has gone up to about 10 cents a pound or \$200 a ton, in both cases large increases over the prevailing price of one year ago. With the recent purchases of timber limits the company has now 2,000 square miles of very desirable properties.

Plans were made a year or so ago for purchase of four machines that would manufacture kraft paper with a capacity of about 12 tons each daily, adding about 50 tons to the present production, bringing it up to 110 or 115 tons a day. As a result of the moulders' strike in England the delivery of these machines has been greatly delayed and it may be late this fall before the first one is installed. Ordinarily this might mean a drop in the company's profits, but not so in this case, because it is understood that with the very high prices for pulp the company is able to make almost as much as if this pulp had been made up into paper.

**CANADIAN PRICE SUITS U. S. PUBLISHERS.**

"We are solving the print paper situation for the smaller newspapers of the country by direct action. Over one hundred newspapers have signified their desire to become members of the Publishers' Buying Corporation," said Jason Rogers, publisher of the New York Globe and chairman of the executive committee of the new buying corporation.

"We are offered millions of cords of pulp wood, scores of saw mills, and many paper mills. We will seek to buy supply of print paper for our members from mills and jobbers at fair prices," continued Mr. Rogers.

"We believe that we can buy collectively more advantageously than the detached small purchaser, and will seek to stabilize the price of paper to the average paid for all tonnage under all contracts with members.

"If those at present manufacturing and selling print paper are unwilling to do business with us at fair prices, they will have no one else to blame but themselves for forcing individual publishers into the manufacturing business.

"We are inviting all manufacturers and jobbers to quote us prices for tonnage and figure that when fully organized we will be the largest single purchaser of newsprint in the United States, with financial backing entitling us to the very lowest prices.

"There are signs that some of the larger newspapers are becoming interested in our efforts, but our policy, so far as I can influence it, will be primarily directed toward papers without contracts or assurance of supply.

"Judging from information coming to me during the past week, I am sure that we are going to buy paper for our members at better prices than the present spot market, and after January 1, 1921, at substantially the Canadian Export price.

"We will buy from reputable mills of profit, but will avoid those who are seeking to plunder the innocents. Our newspapers must seek to hold down consumption to the lowest point and have confidence in our ability to buy just as cheaply, on a pinch, as the speculators through whom they have bought in the past.

"My time is fully occupied with the work of the new organization, which I am confident is going to produce effects unattainable through any other process than co-operation, with all hands working for the good and benefit of all others."

**LAURENTIDE LEADS THE LEAGUE.**

By defeating St. Maurice Paper Company team at Grand Mere on July 4th, the Laurentide A. A. baseball team assumed the lead in the St. Maurice League race. Laurentide won by 3 to 1. Sims, for the winners, pitched in good form, allowing only three hits, while Reynolds allowed four hits. Score by innings.

R. H. E.  
 Laurentide ..... 009 200 10x—3 4 2  
 St. Maurice ..... 000 000 001—1 3 3  
 Batteries—Sims and White; Reynolds and Keefe.

**Standing of Clubs.**

Laurentide .....	3	2	.600
St. Maurice .....	2	2	.330
Three Rivers .....	1	2	.333



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, July 3.—According to pulpwood contractors in Toronto, the production of poplar wood recently has been abnormal, due largely to the scarcity of spruce. The head of one of the firm states that hardly a day passes that does not see from five to ten thousand cords offered by producers. Heretofore the demand for poplar has been quite normal but the production of spruce has fallen off very considerably and the producers are turning their attention to poplar, large supplies of which are now available at the shipping points. The fact that the wood is easy to peel and easy to get at also contributes to the big output. There is practically no market for spruce and balsam owing to the scarcity and it is largely a question now of when and how deliveries can be made. Peeled spruce is quoted at \$18.00 a cord and a little less, according to grade and quality and poplar is selling at about \$13.00. Hemlock is very little used and is quoted at \$12.00. The contractors state that the biggest problem now being faced is that of transportation. It is very difficult to get the wood out owing to the great shortage of cars, the situation not having improved materially in that respect within the past month or two. In the Gatineau Valley, a Toronto contractor states, there is a pile of 14,000 cords of poplar that has been lying there for weeks owing to lack of cars to get it out. It is the general opinion that peeled pulpwood will reach higher price levels than at present, although it is anticipated that the situation will be governed to a considerable extent by the labor supply. If, as is anticipated in some quarters, labor is diverted from other channels by a slump in other fields of work, many laborers will find their way to the woods and thus increase the output and help to moderate the prices for wood.

All lines of pulp continue scarce and mills are having the greatest difficulty in securing sufficient to keep their machines running. Ground wood pulp is selling for as high as \$150 in United States funds and is hard to get at the money. Contracts for news sulphite are being made at from \$150 to \$175 and bleached sulphite is quoted at \$150 and \$175. The prevailing opinion in paper circles is that pulp is destined to go still higher in price. There are no signs that production is catching up with the inordinate demands that are being made on the resources of the pulp manufacturers and while the big under-production exists any skyward figure is liable to be touched in the market.

While the shortage of newsprint continues, it is reported that there has been a slight falling off in the prices in the open market and no very spectacular sales have been recorded. While no one has any surplus, the needs of the Canadian publishers are being fairly well met and while some publishers are a bit anxious as to the future, there are no evidences of a famine at the present time.

Conditions in the paper trade generally are unchanged, although the week saw an advance of 10 per cent. on all toilet papers, effective June 26th. For eight ounce roll toilet paper the discount off list price now

is 15 per cent instead of 25 per cent and the same percentage of discount applies to the other grades and weights from four to sixteen ounces. On the same date a new tissue list went into effect, all lines, including specialty lines, now being subject to a fifteen per cent reduction in place of the twenty-five per cent previously prevailing. The demand for these lines keeps up and the mills are working at full capacity with no prospect of getting caught up with arrears of orders.

Jobbers are still experiencing the greatest difficulty in getting supplies of book paper and near-famine conditions prevail in this branch of paper making. The warehouses are virtually bare of all lines of book and many urgent orders have to remain unfilled. No changes in prices were noted during the week.

Two of the largest Canadian mills, namely the Howard Smith Paper Co. and the Rolland Paper Co., sent up their price list on Wednesday of this week and only guarantee July shipments at the new figures. The increase represents an advance of 3 and 4 cents a pound on all lines, such as bonds, books and ledgers. For instance, the cost to the jobber now of No. 1 S. C. book will be 19½c, plus freight and packing. The jobbers' price to the trade on the cheapest sulphite bond, as supplied by the two mills mentioned, will be 31c. The jobbers' price for sulphite linen bond in ream lots is 70c and Belfast bond, one of the leading brands, will be 56¢ a pound, jobber to consumer. These prices, fixed by two of the mills only, are not universal and book papers, bonds and ledgers of other mill makes can be had for several cents cheaper, although it is expected that the advance will become fairly general within the next few days.

## NEW YORK MARKETS

New York July 3.—This is the time of the year when paper mills close down for semi-annual repairs and inventories and as a result activity in the industry is slowing up somewhat, yet there is no weakening of demand to amount to anything and business in consuming centres continues at a lively pace. It is true that buyers of some kinds of paper have let up in their operations to an extent, but on the whole demand is ample to satisfy manufacturers and jobbers and to keep them busily engaged.

From present prospects, the market for paper is likely to remain strong throughout the summer, and doubtless for the balance of the year. That manufacturers expect this is intimated by their actions in endeavoring to cover raw material requirements ahead for some time; in fact, further away than is the usual policy of papermakers. This procedure would seem to indicate belief on the part of manufacturers not only in a continuance of voluminous demand for paper, but also a maintenance of high prices on raw material. It is definitely known, for example, that mills situated in various parts of the country are leaving no stone unturned to cover at least a portion of their potential requirements in wood pulp over the balance of the year, and some are buying even into



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1921. Contracts also are being placed for rags, rope, bagging and other raw stock of which paper is composed for delivery many months hence.

The newsprint market presents one of the most novel situations probably ever witnessed by the paper trade. There is a tremendous potential demand for news-paper going unfilled, and publishers are doing everything in their power to secure every ton of paper to be had on contract, and yet offerings in the spot market are frequently remaining unaccepted and are steadily increasing in number and volume. Publishers in the large cities are leaving out hundreds of columns of advertising every day, and printing notices blaming this condition on the dire shortage of newsprint, while paper in the open market—at spot market prices—is being largely neglected. The truth of this matter is that publishers simply are unwilling to pay the prices asked for spot lots of newsprint. All the paper they can get at the contract basis mills are quoting is greedily taken in, and there is a loud clamor for additional supplies at the same prices, but when it comes to meeting prevailing open market quotations, publishers no longer desire to buy. This does not mean that there are no sales of spot newsprint. On the contrary, business of good volume is passing in the open market, but offerings are increasing and everything tends to show that buyers are keeping out of the spot market just as much as their pressing needs will permit.

Beginning with the first of this month, most of the newsprint manufacturers revised their contract basis. The International Paper Company is now receiving 5.75 cents a pound from contract customers for newsprint in standard rolls, and quotations of other mills range around the same level, some being slightly in excess of this figure and one or two quoting a shade under it. Spot prices on newsprint hover about 12 cents per pound. Instances have come to light where sales have been made at a bit below this level, but the great bulk of business being done is at this figure or above it.

Book papers rule very strong in price and there is no easing of demand in any quarter. Unlike newspaper publishers, magazine publishers are eagerly absorbing all the supply of book papers to be had and they pay but scant heed to the prices asked so long as the paper is forthcoming. This would seem to indicate that periodical publishers find it is more profitable to pay the high prices asked for paper and carry all, or nearly all, of the advertising offered them than to turn down the advertising because of the prices they must grant for paper. Machine finished

book papers are selling at 15 to 16 cents per pound, supercalendered book at from 16 cents upward and coated and enameled book papers at 18 cents upward.

Wrappings and tissues are in fairly good demand although activity in this end of the market is not as brisk as it has been, this being attributed to the slowing up of business in retail establishments, with a consequent lighter consumption of wrapping and tissue papers. Prices nevertheless are firm and buyers find it necessary to meet the quotations named to secure supplies. Fine papers rule quotably steady, and are moving into consuming channels in consistent fashion. Mills in general have all the business booked they can accommodate and are working with one idea in view, that of making some headway in catching up with deliveries, which under prevailing railroad conditions is truly a problem.

The board market is firm. Mills are running full and are still far from being up with orders on hand, despite the holding off of boxmakers in making new commitments for board. News board is practically unobtainable at less than \$125 per ton at mills and plain chip board is selling at \$110 to \$115.

**GROUND WOOD.**—Ground wood prices are mounting day by day. Demand is of a pressing character, and those producers or dealers having supplies to dispose of are securing almost any prices they may ask, so anxious are consumers to get pulp. Sales at \$150 per ton at producing mills have been definitely recorded and even at this unheard of price there is very little supply to be had, while rumors have been heard concerning transactions at \$160. Bids of \$130 and \$140 are given little attention by manufacturers for the reason that they are well aware higher prices can be obtained in other directions. Offerings are extremely slim, about the only amounts coming into the open market being occasional single carloads which sellers find they have over and above their contract commitments.

**CHEMICAL PULP.**—Sulphite of every grade is in keen demand and quotations are gradually moving to higher levels. The market is almost quite as bare of available stocks as is the ground wood market, and under a situation where there is such a broad space in between supply and demand, buyers are freely paying any prices within reason when finding pulp for sale. Newsprint sulphite has sold at 8.50 cents a pound at pulp mills, domestic bleached sulphite at 12.50 cents, foreign No. 1 unbleached sulphite at 10.50 cents and easy bleaching sulphite at 11 cents. These prices represent record values for wood pulp, and yet there is nothing in the market at present indicating

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that prices have touched the top. Kraft pulp is available in larger quantity than sulphite, but prices are firm. Business has been reported done in domestic kraft at 7.50 cents and in Scandinavian kraft at 8 cents.

**RAGS.**—An easier tone characterizes the papermaking rag market. This is the season when mills invariably retrench in buying while preparing to take inventory and make repairs, and also because of expectations of lower prices during the summer months and the slowing up of business creates but little surprise. Business is reported in practically every grade of rags at prices under those previously prevailing. The sharpest decline this week has been in roofing rags, which have sold at as low as 2.75 cents a pound at shipping points for No. 1 packing, denoting a drop of almost a full cent per pound within the past three or four weeks. Old whites have eased off about a cent, with sales noted of No. 1 repacked whites at 15 cents, while thirds and blues are available at 4.75 cents and in some instances at lower levels. New cuttings are the one firm item, this being due principally to the small amounts coming forward from clothing houses and the resultant unwillingness of packers to part with stocks now on hand at cheaper figures. New white shirt cuttings of No. 1 quality are quoted at around 21 cents and up to 22 cents, No. 1 washables at 11 cents, unbleached muslin clippings at 17.50 cents and fancy shirt cuttings at 13 cents.

**PAPER STOCK.**—Old papers are in steady demand and although the aggregate movement into consuming channels does not appear to be anything out of the ordinary, dealers are using a shortage of stock as a reason to repeatedly advance quotations. Prices on most grades are higher today than a week ago, and there is still a strong uptrend to values. Hard white shavings of No. 1 quality have sold at 8 cents per pound f.o.b. New York and No. 1 soft white shavings at 7 cents. Old folded newspapers are freely bringing 2 to 2.10 cents at shipping points and No. 1 mixed papers around 1.90 cents, while manila papers and ledger stock are selling at firm levels. A feature of the market this week has been the sharp rise in prices on white blank news cuttings. Sales of this grade have been noted at 5.25 cents f.o.b. shipping points, and it need only be remarked that this price is more than double what newsprint in standard rolls sold

fer before the war to show the stiff prices this kind of old paper is fetching. Kraft paper is firm at a basis of about 5.25 cents a pound for old No. 1 kraft-while books and magazines—the one easy spot in the market—are quoted at 3.25 cents at shipping points.

**OLD ROPE AND BAGGING.**—Old rope and strings are in good demand and are holding steady in price, No. 1 manila rope being quoted at an average of 7.50 cents per pound and mixed strings at around 3.15 cents. Scrap bagging is in light request, and No. 1 packing is available at 3.25 cents and less at shipping points.

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EASTERN AGENTS FOR

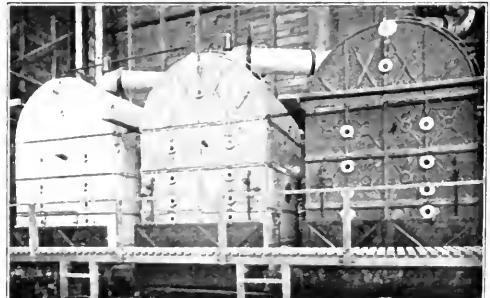
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### MARCH EXPORTS OF PULP AND PAPER.

Dominion trade returns for the fiscal year ending March 31st give the total value of the pulp and paper exports for the year as \$104,636,901. This is the first time they have reached the hundred million mark. In 1919 they were valued at \$82,568,771 and in 1918, \$63,344,143. They were made up as follows:

Paper and mfgs. of . . . . .	\$63,253,419
Chemical pulp . . . . .	33,000,063
Mechanical pulp . . . . .	8,383,419

Total . . . . . \$104,636,419

The year's paper exports included 14,272,513 cwt. (approximately 713,625 tons) of newsprint valued at \$53,203,792, constituting more than 50 per cent of the total.

The unmanufactured pulpwood exported during the year amounted to 838,732 cords, valued at \$8,454,803, compared with 1,597,042 cords valued at \$15,386,600 in 1919, and 1,002,127 cords valued at \$8,339,278 in 1918.

Pulp and paper exports for March, the final month of the year, were valued at \$11,668,796, a gain of \$3,668,236 over the corresponding month of 1919, as follows:—

Paper and mfgs. of . . . . .	\$5,732,122	\$ 7,231,207
Chemical pulp . . . . .	2,041,884	3,875,281
Mechanical pulp . . . . .	226,554	562,308

Totals . . . . . \$8,000,560 \$11,668,796

Exports of newsprint for the month were 1,426,149 cwt. (71,307 tons) valued at \$6,185,305.

Unmanufactured pulpwood exported during the month amounted to 47,904 cords valued at \$497,984, a drop of over 100,000 cords in quantity and of \$910,159 in value, compared with the corresponding month of 1919.—Issued by Canadian Pulp and Paper Association.

### NEW MACHINE FOR MAKING BOARDS.

Improvements in multi-cycle mould machines for the manufacture of paper boards have recently been patented by Mr. G. H. Hedley, of Loudwater, and Messrs. J. White and F. W. Gray, of Leith Walk Foundry, Edinburgh.

The usual upper felt is dispensed with, and an endless wire substituted. The production of boards smooth on one side or face is effected. Boards so produced require less calendering, and, of a given bulk, can be produced from less material than if made in the usual way.

The sheets coming from the cylinder moulds and lying on the upper surface of the under felt encounter

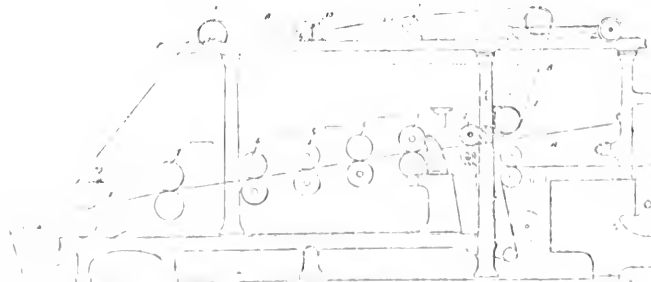
the endless wire just before entering the nip of the first pair of primary press rolls, the under felt and the wire with the interposed board being subsequently led through succeeding pairs of primary press rolls, which impress the mesh of the wire on the upper face of the board and a surface characteristic of the felt on the under face of the board; the entire volume of water expressed passing through the under felt, there being no accumulation of water on the upper side, such as is experienced when an upper felt is employed.

As will be understood, the surface impressed by the wire is relatively smooth, i.e., much smoother than the surface characteristic of the felt; the minute protuberances and depressions caused by the wire serving to key the coating, if any, which may be subsequently applied to the board.

In the accompanying drawing A denotes the under felt, and B the endless wire co-operating therewith. 2, 3, 4, 5, 6, 7 and 8 represents sets of primary press rolls in which the boards, sandwiched between the wire B and the under felt A, are subjected to the desired pressure. 1 denotes a vertically adjustable lead roll located in front of the first pair of press rolls, the adjustment of which guide roll determines the bight presented to the entering sheets. After leaving the upper roll of the last pair of press rolls 8 the wire passes around a carrying guide roll 9, a wash roll 10, a guide roll 11, and a stenting roll 12, whence it returns by way of the guide roll 1 to the press rolls.

### PLANTING 10,000,000 TREES IN MASSACHUSETTS

Forestry experts of New York and Massachusetts give vigorous indorsements to state and community forestry experiments. According to these forestry economists, state and community tree planting is one of the most decisive means of averting a tree famine. They urge that other states follow the example of Massachusetts which has come to be considered the most advanced commonwealth in state forestry. In that state a programme is in force which calls for planting some 10,000,000 white and Scotch pines per year, part of them on state grounds and some to be turned over eventually to private owners. New York State foresters, encouraged by the results in Massachusetts, are urging that greater reforestation programs be undertaken in New York. Although there has been considerable tree-planting by communities in New York, forestry experts are calling for aid by the State in reforestation projects. A New York State forestry college survey calls attention to the fact that 7,000,000 acres of land in the state ought to be reforested through some public means.



# Pulp and Paper Magazine

## OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., July, 15, 1920.

No. 29

### TABLE OF CONTENTS

#### Editorial:

An active trade commissioner . . . . .	741
Political changes in Canada . . . . .	741
Sir Lomer Gouin . . . . .	742

#### Special Articles:

Pulp and paper opportunities in Japan . . . . .	743
The black liquor recovery process . . . . .	747
Business meeting of the Technical Section . . . . .	751

#### News of the Industry:

Directorate of new Riordon Company . . . . .	745
Fort Frances vs. western publishers . . . . .	746
Spanish River disposes of dividend arrears . . . . .	746
St. Maurice beat Laurentide . . . . .	749
Flood of mills for Twin Cities . . . . .	750
Swenson Evaporator Co. wins case . . . . .	750
Increased china clay prices . . . . .	750
A central laboratory for the industry . . . . .	751
Porter leaves Syracuse for A. P. & P. A. . . . .	754
Laurentide forest policy without equal . . . . .	754
Forest fires near Hudson Bay . . . . .	754
Foresters to meet at Grand Mere . . . . .	754

British trade news . . . . .	755
New members of Technical Section . . . . .	756
Price Bros. close new contract . . . . .	758
Edwards on Riordon board . . . . .	758
Sir George Bury leaves Whalen Co. . . . .	758
Canadian mills drop U. S. customers . . . . .	758
Pulp and paper news . . . . .	759
Pulp mill for Levis . . . . .	760
Americans buying Canadian paper stocks . . . . .	760
Brompton's stock increase . . . . .	760
Canada Paper Co. goes to appeal . . . . .	760
Carl Riordon a Sun Life director . . . . .	760
Extension of Belgo plant . . . . .	766

#### Miscellaneous Information:

Propose Cellulose Section of A. C. S. . . . .	750
Those present at the Soo (Picture) . . . . .	753
Sir Lomer Gouin (Portrait) . . . . .	754
Review of recent literature . . . . .	756

#### The Markets:

Canadian trade conditions . . . . .	761
New York markets . . . . .	762

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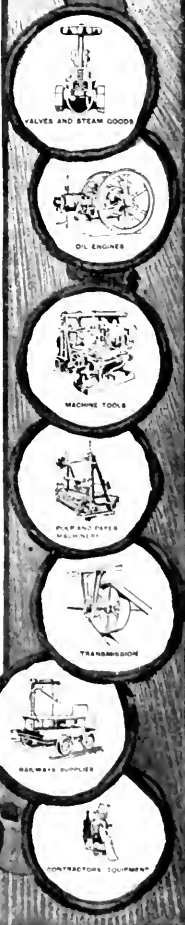
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# EDITORIAL



## AN ACTIVE TRADE COMMISSIONER.

When the invitation came last week to meet Mr. A. E. Bryan, Canadian Trade Commissioner of Japan, and to hear him speak on Canada's opportunities in that country, we rather expected to see a more or less superannuated politician who had been given a comparatively easy job. Great was our surprise and delight in meeting a young, live-wire Canadian whose remarks showed that he has been actively on a job which has been big enough to keep a real man constantly busy. The essentials of Mr. Bryan's talk to a special meeting of as many members of the Pulp and Paper Association as could be reached at short notice, but who nevertheless crowded the large board room of the association, are found on another page. In addition to these remarks Mr. Bryan showed a number of excellent pictures of Japanese paper mills, including even illustrations of logging operations. His keeness in perceiving the principal features in the Japanese industry was evident in his remarks, and in the lessons deduced for the Canadian industry to observe.

A careful study of Mr. Bryan's address will show that for certain kinds of pulp and varieties of paper Japan offers an attractive market which should be carefully, courteously and immediately cultivated. Recommendations are made which would do credit to an investigation by an experienced paper maker, and Canada is certainly fortunate in having a man occupy this important post who is so capable of advising Canadian industries. Mr. Bryan's investigations and recommendations are by no means confined to pulp and paper. He has carefully looked into other lines, and he is quite as frank in stating where an industry has no chance as he is in urging activity.

An interesting point that was brought out was the manner in which Canadian courtesy has returned a benefit. A little while ago a prominent member of the Japanese paper industry visited Canada, and was shown through such plants as he wished to visit. Canadian paper makers were glad to have him visit their plants because of their pride in them and because they always take pleasure in entertaining the stranger within their gates. It was a particular delight to be honored with a visit from the kindly and courteous gentleman from Japan, and it was thought that his visit ended except for the friendships that resulted from it. Such was not entirely the case, because it was in large measure the memories of this

gentleman's visit to Canada which enabled Mr. Bryan to find a welcome as a Canadian at the plants of the Japanese paper makers. Mr. Hall Caine was quite frank in expressing his astonishment at the generosity of Canadian paper makers in opening their mills to visitors. It seems that the good work which Canada has been doing in promoting this openness has begun an international movement for less secrecy and for more cordial co-operation among pulp and paper manufacturers.

We are glad that Mr. A. E. Bryan represents Canada in the land of cherry blossoms and it is to be hoped that the pulp and paper industry will show its appreciation to Mr. Bryan by co-operating with him in every possible way, in his endeavor to make Canadian goods known and by his suggestions have Canadian goods made, sold and shipped in such a manner as will always give satisfaction.

## POLITICAL CHANGES IN CANADA.

The premiership of the Dominion, as well as that of the Province of Quebec has undergone a recent change. Sir Robert Borden, who carried on the duties of the highest office which the Dominion could confer during one of the most difficult periods in Canada's history, has found it necessary, because of failing health, to resign. The reins of Government, insofar as they may be held by the leader of the party in power, pass to Hon. Arthur Meighen, who has been associated with Sir Robert as Minister of the Interior. The new premier is a Westerner who has come to appreciate through contact with those of the East the needs as well as the opportunities of the whole Dominion. In his former capacity as Minister of the Interior, Mr. Meighen had jurisdiction over the Forestry Branch and, consequently, is the member of the Government most familiar with the pulp and paper industry. It is to be hoped that under Mr. Meighen's guidance the Dominion Government will show that appreciation of the value of the pulp and paper industry which has been one of the strong features of the Provincial Government of Quebec for many years. There has been a tendency to enact legislation which would hinder and restrict the development of the industry. Besides this legislation of what might be said to have an inactive effect, there is also an active effect of legislation and policy which might be inaugurated for the benefit of all wood-using industries. Two important and diverse instances might be cited in the need for better fire protection and the en-

couragement of better utilization. For the former there is need of more careful supervision of settlers as to the lands they occupy and the manner in which they clear them and also in bringing all the railways to a more strict accountability with regard to fires along their right of way. With regard to the utilization of the forest, we believe the principal point will be the encouragement and support of the Forest Products Laboratories.

The new Premier's political duties will be particularly arduous, and he probably will not have much opportunity for constructive thought on these matters, but he will be responsible for putting capable men in charge. We believe that Mr. Meighen appreciates the importance of Canada's forest resources, and that he will exert himself on behalf of those depending upon them.

#### SIR LOMER GOUIN.

During the many years of his public life and particularly that spent as Premier of the Province of Quebec, Sir Lomer Gouin has been, in the best sense of the word, a public servant. He has shown an intimate knowledge of the various industries which are established in this Province, and has always been on the lookout for means whereby the prosperity of the people of Quebec particularly, and Canada in general, can be promoted and protected. One of the most important features of Sir Lomer's administration was the inauguration, in 1910, of provincial legislation which has so modified the lease of Crown timber lands that only after at least one step in manufacture may wood cut from these lands be exported. It has been recognized and appreciated by the people of the province that this measure was a foresighted step, not only in the conservation of Quebec's natural resources, but also as an insurance policy for the continued employment of Canada's industries depending upon a protected forest.

Sir Lomer's continued interest in the pulp and paper industry is assured by the announcement that he has been elected a director of the Laurentide Company. The ex-Premier has come to know this company quite intimately through his interest in its farsighted forest policy and well known efforts that have been made in the promotion of reforestation. The conservation of the forest has been one of Sir Lomer Gouin's principal interests since he entered the service of the public at Quebec. Few men in Canada appreciate more clearly the need for careful procedure with respect to the forest. His interest has been not merely the cultivation of the principal source of revenue for the province, but rather as one of the principal sources of raw material for support of industries which provide employment for thousands of the people. It frequently happens that the influence and advice of a great man in private life has greater

effect and carries more weight than if he held a government office. Such is not unlikely to be the case in the present instance. The attitude toward the government of the Laurentide Co., with which Sir Lomer is now identified, has been always a generous one. The company naturally and properly desires to make a good profit. A large proportion of these profits have for some years been expended in experiments and demonstrations which are sure to be of great benefit to the province. In fact this has been one of the objects in mind.

By his association with the Laurentide Company Sir Lomer becomes definitely identified with Canada's great pulp and paper industry in a direct and personal way. Both may be truly congratulated. The industry needs men of vision and with the growing closeness of the contact there is increasing need for co-operation between industry and Government in a manner which will be fair and helpful to the public and not simply a means for industry to get rights and privileges at the expense of the people. It is particularly gratifying to have a man among us who knows what is proper and right for an industry to ask of the government and who also realizes the obligations of the government as a trustee of the country's resources.

Sir Lomer Gouin leaves his Government office with the good will, the good wishes and the gratitude of Canada's largest province. He has well earned an enviable reputation as a high minded, foresighted political force, who has always had the best interest of his Province. His ability will assure his success in the field he has chosen to enter, and it is only to be hoped that his successors at Quebec will follow the broad-minded policy of his administration.

Hon. L. A. Taschereau, who has been Sir Lomer's right-hand man for some years, succeeds him as Premier, and it is gratifying to have him give the assurance of a continued progressive policy along the lines so successfully laid by his predecessor. In his first public utterance since assuming command of the administration at Quebec, Mr. Taschereau said:

"I will continue to follow in the way which Sir Lomer Gouin led, so that the Province of Quebec may be the sanctuary of all classes and religions, all living to give her peace, harmony and concord, and so that it will continue to be said in the future as in the past that there is no province or place such as Quebec where there is such a measure of liberty."

Members of the American Society of Chemical Engineers, of whom about 140 visited the E. B. Eddy plants at Ottawa, were profuse in their compliments on the way the visit was planned and conducted. A souvenir program, printed on the premises, outlined the processes and indicated the itinerary. Small groups were provided with competent guides.

# Pulp and Paper Opportunities in Japan

The following is a summary of some remarks by Mr. A. E. Bryan, Canadian Trade Commissioner to Japan on the pulp and paper industry in that country to members of the Canadian Pulp and Paper Association, July 7, 1920.

## *Mechanical Pulp.*

There are only a few small mills in Japan manufacturing ground wood pulp for sale. The total annual production of mechanical pulp in Japan is estimated to be nearly 200,000 tons, but the correct figures are almost impossible to obtain since most of the leading mills manufacture for their own use and keep the figures of production private.

There have been no imports of mechanical pulp into Japan since the war, and I do not see any prospective opportunities in sight for business.

### *Imports of Sulphite Pulp.*

Origin:	1919.	1918.	1916.	1913.
Total	10,687,205	6,835,589	9,017,719	4,620,477
Canada	3,781,512	4,079,144	656,281	354,146
U. S.	3,859,774	2,333,858	1,205,173	113,622
Sweden	2,529,784	418,476	5,697,424	1,254,625
Germany		4,109	73,024	2,176,454
Total 28,742 tons in 1918—Canada 18,240 tons.				

The first presumption that will probably enter your heads, gentlemen, is that the pulp manufacturers of Canada certainly must have been hot after Japanese business. But with only one or two exceptions that I know of, this has not been the case at all, and our sales would not have been so successful if Japanese buyers had not gone out of their way to purchase from Canada. I suppose that I receive more inquiries for Canadian paper pulp than for any other article, and although our mills have been hard pressed to handle all the business received from other quarters, I am pleased to say that many of the inquiries which have passed through the Yokohama office have resulted in substantial business. From the returns just read you will note the remarkable change in Canada's contribution, say between the years 1916 and 1918. In the former year we supplied a little over 7 per cent of the total requirements, while in 1918 we sold Japan 62.7 per cent of what she bought. Last year our portion dropped to 38 per cent of the total, but even at that we supplied over 752,000 lbs. more than our next competitor, the United States, and we can presume that a good proportion of their shipments were made up of Canadian pulp.

### *Future Prospects of Pulp Business.*

Last summer I had the pleasure of taking a trip to the Northern Islands of Hokkaido and Karafuto. One of the chief objects of my visit was to investigate the pulp resources of Japan. Through the courtesy of the managing directors of the various pulp companies I was able to go through every pulp and paper mill in the Hokkaido. I then went on up to Karafuto and there had a most interesting as well as profitable insight into the pulp industry. I went through every pulp and paper mill, and saw two new mills in course of construction. I saw the process of manufacture from the taking of the logs out of the bush to the finished pulp and paper, and to our pulp

producers in Canada I can say this—there will be a market for Canadian pulp in Japan for some time to come.

In the first place, nearly all these mills are now 5 to 20 miles away from their log supply. In most cases there are no available rivers to boom the logs down to the mill, as is the case in this country. The logs which are cut in 12 foot lengths are therefore all drawn by horses, in some cases ten miles, to the nearest railway siding (owing to this situation the Japanese are now looking for pulp wood in Manchuria and Siberia, where mills will be built). Here they are stacked up to be hauled down by train during the summer months to the mill. The cost of getting these logs from the bush to the mill must in most cases be very high, in spite of the advantage of lower wages. These logs are brought down the rail line in some cases from 20 miles distance, while in many places the logs have been all cut and used up close to the railway, and, as I say, they are bringing them in from a distance of five and ten miles, perhaps one log at a time, depending on size. In some districts the logs are drawn down to the sea, and boomed from there to the mill in what are called "Ikada" or rafts. These logs are cut from what is called "Matsu" (pine). About 70 per cent are Ezo Matsu, while the rest are Todo Matsu. Although Todo Matsu makes more pulp per cubic foot Ezo Matsu is used the most because its fibre is much stronger. About 70 per cent of all the timber in Karafuto is Ezo Matsu and Japan has here a good many years' supply of pulp wood.

I, therefore, feel quite certain that Canadian pulp will always sell in Japan—for the following reasons:

1. On account of the extensive handling of logs by hand and methods of bringing same to mill, costs are of necessity high.

2. Although the cost of labor is half that in vogue here in Canada, I figure that two Canadian workmen will have the same efficiency as three Japanese. It therefore takes more men to look after a machine in Japan than in Canada.

3. Wages in Japan are continually advancing so that ridiculously cheap labor is really a thing of the past. I was rather amused to read in a Canadian journal the following news item:—

#### "MADE PAPER 250 YEARS AGO."

"The Japanese paper industry was already established nearly 250 years ago, when the Dutch traders first foot in the country. Today nearly 150,000 people are said to be employed, at an average daily wage of 24 cents. Labor at this price leave plenty 'of room for price-cutting.'"

This is very far from the truth. In all mills I visited in Hokkaido and Karafuto the men laborers were receiving the equivalent of \$2.50 or \$3.00 a day. They received \$1.00 a day wages and free house, while they could get their rice, clothing and other necessities at one-third of the price charged in retail stores. The management figured that they were thus getting the equivalent of \$2.50 or \$3.00 per day. Women laborers get 50 to 60 sen per day and house, etc.

4.—The Japanese mills do not make bleached sulphite pulp—although some of the mills bleach pulp for their own use.

5—Canadian pulp has the reputation of being the strongest in fibre of any pulp on the market.

6—Canadian, up to the present, has been the cheapest and, therefore, the best value for the money of any other pulp. Its market price is often lower than that of domestic production and, really, the local mills have to regulate their prices to meet the Canadian.

7—Canadian pulp is now well known and those mills who have been using it, being conservative, will want to continue using it.

Some of our brands are established and will now almost sell of themselves.

I also think that this business could be considerably enlarged if more Canadian mills would cater a little to it, and send out their own representatives to study the requirements and consult with the users, etc.

#### *Production and Consumption of Sulphite Pulp in Japan.*

Perhaps you would be interested to hear what Japanese mills are capable of producing: In 1919 the production of sulphite pulp, unbleached for sale amounted to 23,404 tons. Of this amount 64,044 tons were sold on the open market. Three of the pulp mills in Karafuto are to double their capacity in the near future. It is estimated therefore that the domestic supplies of sulphite pulp, unbleached, for sale in Japan this year will amount to 90,000 tons, while some paper men state that by the end of 1921, 150,000 tons will be produced.

The consumption of sulphite pulp in Japan is not definitely known, although those best informed state it to be approximately 120,000 tons, but we know it has been increasing every year, and some idea of the requirements may be gained by comparing the output of paper during the past six years. These figures include about 50 per cent of newsprint.

	Lbs. (approximately).
1914.....	327,000,000
1915.....	367,000,000
1916.....	405,000,000
1917.....	453,000,000
1918.....	499,000,000
1919.....	519,000,000

#### *Imports of Chemical Pulp.*

During the same period the imports of chemical pulp have been as follows:—

Year.	Tons from Canada.	Tons, Total.	Values declared, Yen.
1914.....	2,921	15,312	1,571,212
1915.....	7,774	52,688	5,974,892
1916.....	5,692	57,720	9,017,719
1917.....	8,580	11,334	2,800,741
1918.....	18,000	28,762	6,835,589
1919.....	15,426	40,744	10,696,233

It will be seen therefore that there is a market for about 40,000 tons a year of imported sulphite pulp. It is up to Canadian mills to maintain the lead in this business. There are many improvements to be made in the Canadian product, for there is no use in denying that some Japanese prefer the Swedish pulp for quality and will pay higher for it. It is said that our pulp is stronger than the Swedish in fibre and that, if our mills paid more attention to pecking and grading we could increase our business.

#### *Quote in Canadian Dollars.*

One of the features that worked against us last year was the fact that as soon as American exchange started to go up some Canadian mills demanded payment in gold dollars. Thus, for instance, in January last, Canadian easy bleaching sulphite coming in quality between the Swedish 3 crown and 2 crown, cost the Japanese importers over 103¼ sen per lb. at the rate of exchange for American gold dollars (49%). On the other hand the rate for the pound sterling was rapidly dropping and Svartvik 3 crown bought at £28 and 2 crown at £27, 10s per 1000 kilos (2,204 lbs.) c.i.f. Japan, cost the Japanese importers only 10½ and 10 1-3 sen per pound laid down, duty paid. This accounts for the increased shipments of Swedish pulp, because the imports from Europe were costing the buyers less than those from Canada.

Gentlemen, if at all possible do not specify "Payment in U.S. gold dollars," but "Payment in Canadian funds." In some cases where a manufacturer must pay for his raw material, etc., in U.S. currency this may not be practicable, but stick to the flag, if at all possible, every time. I should think that pulp is one of the things that could be manufactured and sold in any country for Canadian gold dollars.

#### *Value of Paper Imports.*

	Total Yen.	U.S. Yen.
1918—Total printing.....	1,040,073	1,026,946
(Under 58 grams per sq. metre*)		
Other printing paper.....	2,898,428	2,635,625
Writing paper.....	578,879	254,978
Drawing paper.....	118,023	4,801
Packing paper.....	2,012,917	1,838,038
Match paper.....	68,869	47,560
Cardboard paper.....	912,198	908,748
Tissue paper.....	251,008	161,590
Parchment, parafine wax...	441,971	330,883
Fancy.....	574,967	509,651
Other.....	498,157	336,612

\* Equals 36.6 lbs. 24 x 36—500.

Although Canada secured the magnificent total of yen 2.00 worth of business with Japan in paper in the year 1918, I think that if the figures were procurable for 1919, there would be at any rate a small increase, as I know of shipments of wrapping paper which were ordered in Montreal. However, Canada certainly should do better than the above figures will illustrate.

American mills send their travellers over to Japan to drum up the business and deserve all the business they get. There have been no Canadian men that I know of who have in recent years touched Japan to look into market conditions. Gentlemen, you will never get, nor do you deserve to get, export business by sitting down in your comfortable offices, expecting to have orders flow into your hands of their own accord. The firms who send out their salesmen, prepared to stay a few weeks in the country to familiarize themselves with the East, to meet the Japanese in the trade—to be entertained and to entertain—to show samples and quote prices delivered Japan—to meet buyers half way at least, if their specifications should vary a little from what is used at home—Gentlemen, these are the firms who are going to build up a suc-



cessful and permanent business. Some American and British mills have their own offices in Japan—others have one of their own men out there, who works in co-operation with their sole agents. He attends to claims, studies the requirements, etc.

Yes! There is good business to be had in Canadian papers if we want it. Up to the present our mills have apparently not cared for it, so naturally they did not get it. For instance I know of one firm who sent in orders during the last six months for 120 tons of high grade bonds and 12,000 reams of other writing papers, but to date have been able to get only 10 tons. How can we build up a business, if firms in Canada will not send us the goods? If they are sending it to other countries why not Japan? I would strongly advise our mills not to be indifferent to the Japanese market. There will probably come a time when your European customers will be able to get their requirements filled in Europe, when your Australian or New Zealand friends will through various causes not require as much as they have been during the past few years, when our American neighbors may get some of their supplies from old sources in Europe. We cannot tell what the future conditions will be, but we do know this, that the pulp and paper industry in Canada is expanding by leaps and bounds and, as our capacity increases as it is doing by leaps and bounds, we will be looking for foreign outlets. But, gentlemen, do not look for these outlets in Japan if you intend to neglect the market now, and do not think you can trot over to our next door neighbor and sell anything you have left to them just whenever it pleases you. If you do, you are greatly mistaken because you will be forestalled. America is forestalling you right at this present time whereas England, Scandinavia and Germany will before long be pounding at the back door endeavoring to get in again on this business.

What I would like to see some of the mills do, is to lay aside, say 1, 2 or 5 per cent. of their output for Japan. There are plenty of good Japanese firms who would only be too anxious to get your paper and pulp. These shipments, although perhaps small, would at least be an advertisement of what we produce. They would at least cause the mouths of the Japanese consumers to water for more, and then in future when you have more available for export to Japan—you would have your channels dug through which your product could be put on the Japanese market. Just think that over, and if you decide to follow my advice in the matter, let me know. I will be delighted to co-operate with you in this direction. This applies not only to paper but to all lines exportable to Japan.

*Output of Paper in Japan in 1918.*

According to the investigation of the Japanese Paper Union of manufacturers, the total output of all kinds of paper, except straw pasteboard, during 1919 amounted to 519,142,000 lbs. As regards the production of the fourteen members of the union, the figures show an increase of 20,177,000 lbs., over 1918 and of 65,042,000 lbs., over 1917. The following table denotes the output of the different kinds of paper during 1919.

Kind	Output for 1919 — lbs.
Fine Printing Paper . . . . .	72,737,000
Common Printing Paper . . . . .	81,985,000
Newspaper . . . . .	229,762,000

Imitation Paper . . . . .	25,991,000
Rolled Paper . . . . .	12,276,000
Match Paper . . . . .	10,296,000
Colored Paper . . . . .	5,449,000
Packing Paper . . . . .	23,961,000
"Renshi" and "Toshi" . . . . .	9,766,000
Miscellaneous Paper . . . . .	46,920,000
Total . . . . .	519,142,000

The following table shows the production of paper by every paper mill during 1919:—

Kind	Production Pounds
Oji Mill . . . . .	192,223,000
Fuji . . . . .	144,209,000
Mitsu Bishi Mill . . . . .	51,077,000
Kyushu Mill . . . . .	28,514,000
Kokura Mill . . . . .	20,447,000
Yokkaichi Mill . . . . .	17,928,000
Kiso . . . . .	15,844,000
Central . . . . .	14,366,000
Tokyo Pasteboard . . . . .	12,979
Tokyo Hokuetsu Mill . . . . .	6,266
Kumano Mill . . . . .	4,005
Umedzu Mill . . . . .	3,905
Nakanoshima Mill . . . . .	3,650
Yutansha . . . . .	2,379
Total . . . . .	519,142

**DIRECTORATE OF NEW RIORDON COMPANY.**

Organization of the Riordon Company, Limited, securities of which recently were placed in the Canadian and American markets, has been completed. On July 1st last, the Riordon Pulp and Paper Company, Limited, ceased to be an operating company, all its mills as well as the mills of the Kipawa Company, Ltd. having been taken over by the new organization.

A strong board of directors has been appointed, comprised largely of members of the Riordon Pulp and Paper Company board, although two new names are included, that of W. D. Ross, director of the Bank of Nova Scotia, Nova Scotia Steel and Coal Company, Limited, Matagami Pulp and Paper Company, Ltd., etc., and Senator W. C. Edwards, who represents some of the new interests which have been included in the company.

The full board of directors of the Riordon Company, Limited, now stands as follows:— Charles Riordon, president; Carl Riordon, vice-president and managing director; C. B. Thorne, second vice-president and technical director; J. B. White, third vice-president and timber director; T. E. Warren, manager of the Ticonderoga Pulp and Paper Company, fourth vice-president and mercantile director; F. B. Whittier, secretary and treasurer; J. S. Douglas, general manager of the Mail Printing Co., Toronto; T. J. Stevenson; C. G. Baneroft, president, International Trust Company, Boston; J. W. Wheeler, Parkinson & Burr, Boston; W. D. Ross and Senator W. C. Edwards.

The above make twelve directors in all, but it is expected that from time to time new names will be added to the board until the fifteen directors authorized for the company, have been appointed.

The board of Gataineau Company, Limited, has also been appointed, and is constituted exactly as the board of the Riordon Company, Limited. The Gataineau Company, Ltd., takes over the Edward and Gilmour and Hughson properties. All of its capital stock is owned by the Riordon Company, Limited.

### FORT FRANCES VS. WESTERN PUBLISHERS.

Decision was made July 8 by the Paper Control Tribunal, consisting of Justices White, Archer and Middleton, that the Fort Frances Pulp & Paper Co., must refund to the various newspapers concerned all charges over and above the authorized prices for newsprint, amounting to about \$122,000. At the same time the Tribunal granted the appeal of the Fort Frances Pulp & Paper Co., against another ruling, and allowed the company to charge \$80 a ton for paper from and after the 1st of December 1919. While no date was set for the continuance of this order it was understood that it would mean until the recent advance in prices allowed on July 1st. In any event it was intimated by I. Hellmuth, K.C., who appeared for the company, that the decision of the tribunal would be carried to another court, since the company challenged the jurisdiction of the Paper Control Tribunal.

#### A Double Win.

At the conclusion of the argument the Tribunal adjourned to draft their order. This was concluded shortly after noon, and handed over for preparation, the judges returning later in the afternoon to affix their signatures, the decision being unanimously agreed to.

Following is the decision and order based thereon:

"We do determine and order:

"1. That the appeal of the Fort Frances Pulp and Paper Company from the said order of the 24th December, 1919, should be and the same is dismissed.

"2. That the appeal of 'the publishers' from the said order of the 24th December, 1919, should be and the same is allowed:

"And we do further determine and order that the price chargeable by the Fort Frances Pulp and Paper Company, Ltd., to the publishers shall be:

"From January 1 to 31, 1918, \$50 per ton.

"From February 1st to June 30th, 1918, \$57 per ton.

"From July 1st to November 30th, 1918, \$66 per ton.

"From December 1st, 1918, to December 31st, 1919, \$69 per ton, with an additional charge of \$3 per ton in each case for shipments in less than carload lots.

"3. And we do further determine and order that the appeal of the Fort Frances Pulp and Paper Company from the order of the 31st December, 1919, should be and the same is allowed and that the price to be paid by the publishers to the said company from and after the 1st January, 1920, shall be \$80, per ton, with an additional charge of \$3 per ton for shipments in less than carload lots.

"And we do further determine and order that the said company shall refund and repay to each of the said publishers respectively the amount by which the amount charged by the said company to such publisher exceeds the amount payable upon our finding and determination, such amounts being subject to a set-off for any balance due by any publisher for paper supplied either before or since the 31st December, 1919."

Copies of this decision and order were sent to the litigant parties, and, following the intimation of Mr. Hellmuth, will probably form the basis for further litigation in the civil courts.

#### Many Papers Interested.

The claims involved in the appeal of the newspapers, mostly western journals, covered a period from January, 1918, to December 31, 1919, during which it was

alleged that the Fort Frances Co. had charged and collected prices in excess of those allowed by the Paper Controller, to a total sum amounting to \$122,136.41, which the order now states must be refunded.

These claims based on the accountant's reports, were not disputed as to amount: Herald Printing Co., Prince Albert; Lethbridge Herald Printing Co.; Leader Publishing Co., Regina; Manitoba Free Press Co., Winnipeg; News Publishing Co., Moose Jaw; Times Co., Moose Jaw; Northwestern Publishing Co., Winnipeg; Phoenix Publishing Co., Saskatoon; Chronicle Printing and Publishing Co., Port Arthur; Canada Northwest Publishing Co., Winnipeg; Daily Grain Trade and Live Stock Journal, Winnipeg; Regina Daily Post; Saskatoon Daily Star; Sun Publishing Co., Brandon; Winnipeg Telegram; Winnipeg Tribune Publishing Co. are the papers affected.

#### Will go to Higher Court

Mr. I. Hellmuth, for the Fort Frances Co., opened by stating that his clients did not admit the jurisdiction of the Tribunal. They did not quarrel with the accuracy of the figures presented by Mr. Clarkson, the accountant, except regarding a quantity of paper sold at \$69 in December, 1919, for which they had to secure replacement by the Spanish River Co., paying \$80 for it. This involved 9,094 tons, and he claimed that the company should be allowed on this cost, the more so as he claimed the Fort Frances Co. had shipped far in excess of the obligatory 15 per cent of their output.

Asked by Judge Archer if an order were issued fixing this price whether the company would accept it without suit, Mr. Hellmuth said he could not answer as to that. Mr. Thomson, for the publishers, objected to a general order fixing the price, while he claimed that the \$69 order held, and that the Laurentide and Belgo-Canadian Companies had shipped more than their obligatory quota of 15 per cent of their output at that price.

Mr. Hellmuth said that the December figures were the only ones the Fort Frances Co. took exception to, and intimated that in any event the whole matter would have to be dealt with by another tribunal.

### SPANISH RIVER DISPOSES OF ARREARS IN DIVIDENDS.

By the unanimous consent of the shareholders represented at a special meeting of Spanish River Pulp and Paper Mills, Ltd., held in Toronto on June 23rd, Preferred Shares equivalent to 42 per cent of the par value of the outstanding Preferred Stock will be issued in full payment of all arrears in Preferred Dividend up to June 30th. A further 7 per cent in Preferred Stock will also be issued to retire the dividend vouchers issued for one year's unpaid dividend on the original \$3,000,000 of Preferred Stock.

As a result of this action the Spanish River Company is now able to consider the question of cash dividends on both Preferred and Common Shares. It will be remembered that early in the spring the Company redeemed the talons issued in 1915 in lieu of bond interest and that several other outstanding obligations were disposed of. It is generally understood that current earnings are extremely large, and an announcement of cash dividends within a short time is expected.

Men should strive to find points of contact, not principles of separation.

# The Black Liquor Recovery Process

By G. F. ENDERLEIN.  
Brompton Pulp and Paper Company, Ltd., East  
August, Quebec.

By the recovery of a black liquor is meant the process by which the liquid used for cooking the wood is collected and worked over to make new cooking liquor. The more of the salts or chemicals that are regained the better. The question is, Where do the losses occur and how? This is a difficult question to answer, the losses being hard to stop, but some of the causes may be enumerated as follows:—

**Incomplete washing of the pulp;**

Loss by leaks in pipes, connections, valves, pumps  
Salts decomposing from the heat in the furnace and salts carried away mechanically by the draft;

Loss of salts in the lime sludge from the causticizing tanks;

Loss in leaks by pipes, connections, valves, pumps and tanks; spattering out from tanks in making up the liquor.

Following the recovery from department to department we may start with the

## Washroom.

The washing of the pulp is worked on the principle of diffusion—the pressing away of a heavy liquid by a lighter, which makes it possible to get a relatively concentrated liquor. The washing is done either in open or closed vats, the latter commonly called diffusers and mostly used at present, having some advantages over open vats. Open vats usually are larger in diameter than diffusers and take up more room, besides allowing a larger contact surface by washing, which hinders the concentration of the liquor.

Diffusers are washed under hydraulic pressure where a liquid—the weak black liquor—may be pressed from one diffuser to the other, whereas by the open vat a storage tank has to be provided for the weak black liquor.

With the diffuser system, washing has been tried in different ways in order to ascertain the shortest time necessary and the least waste of liquor to get a pulp free from alkali; among others the continuous washing system where the last blown diffuser is connected to the drain of the previous blown, the wash-water being kept on the first diffuser in the series till the drain shows clear water. In the series are three to four diffusers, the liquor going from the bottom drain to the top of the next diffuser. But this system is not much used, the friction caused by pressing the liquid through so many diffusers being considerable and the washing slow.

Then there are diffusers washed after the old open vat system, each washed by itself, pumping weak liquor on fresh blown and following up with water until clean. Strong black liquor from the diffuser drain goes into a storage tank for evaporation, the weak liquor being passed back to weak liquor storage.

Then we have diffusers washing in pairs, this being considered a superior method. One diffuser is here washed down to weak and the drain then connected to the top of fresh blown. Washwater is turned

on to top of weak diffuser and hydraulic pressure applied. The friction of liquor passing through the pulp is limited, the washing being hastened by pressure on the washwater. The whole washing is accomplished inside of the diffuser, no tanks for weak liquor being needed, while impurities from the air are excluded. It is here that incomplete washing may result in a great loss of salts. Of course the washing cannot be driven any further than where the liquor can be taken care of. The washing will be the more complete corresponding with the strength of the liquor used for cooking, and the less the condensate from the steam by direct cooking there is mixed in with the liquor. The weaker the liquor from the digester a lesser quantity of liquor, having the necessary strength for the evaporator, can be washed out from the diffuser, consequently more weak black liquor than can be taken care of will be on hand and has to be allowed to go to waste through the sewer.

Another cause of excess of weak liquor comes when the washing cuts through on a place in the pulp leaving a part of it unwashed. A perfectly clean washing of the pulp in each diffuser is seldom accomplished as it would bring the strength of the strong black liquor too low for economical evaporation, but the washing is driven as far as possible to reduce loss.

By washing down to 4 degrees Be'ume before cutting off the flow of black liquor to the storage tank the average test of liquor in the tank will be 8 to 9 degrees measured hot and not too weak for the evaporator. The diffuser ahead will be practically clean at that point and the pulp, after the remaining very weak solution has been drained to the sewer, ready to wash out. By indirect heating of the liquor in the digester the black liquor from the diffusers will be of much higher density and a more thorough washing can be done and still keep up the strong black liquor. The hydraulic pressure ought not to be too high, for excessive pressure will only pack the pulp harder in the diffuser and slow up the washing process. A pressure of about 20 to 25 lb. is, in most cases, as high as it may be kept without packing the pulp. In many cases it may be too high; it will depend on local conditions. The washwater ought to be kept as hot as possible.

The next department would be the room for the

## Indirect or Vacuum Evaporator.

Of vacuum evaporators several are in use, the best known being the Yaryan, the Swenson, the Zarembo and the Scott. The two last mentioned are very much alike. Of all evaporators Scott's is preferred on account of its high chamber over the tubes in the steam chest. The loss in chemicals will mostly result here from the liquor foaming over during evaporation. It is here that the high chamber in the evaporator effect counts, as it allows the vapor to separate more easily from the foam on its way over to the next effect steam chest. Liquor drawn over as foam is lost in the drip from the following effect steam chest. The effects ought not to be filled higher than to allow the black liquor to just cover the top of the tube-sheet and allow as much room as possible for the separation

of foam and vapor and make the work for the save-all light. The save-all is an expansion on the vapor line between effects with tubes and baffles to separate liquor from vapor, the liquor being led back to the effect. As in most effective evaporators only the first effect is heated with live steam and the other effects receive their heating from the vapor of liquor from the effect ahead, each effect being under a lower pressure, respectively higher vacuum, than the previous effect. The condensate or dip from the first effect can therefore be used for washing or other purpose, but the drip from the other effects received from the vapor of the liquor contains gases injurious to the eye and if used for washing will cause trouble for the men. Other losses may occur on account of leaky connections, valves and pumps. Leaky tubes will only cause a loss of liquor when the evaporator is shut down, but as the pressure in the steam chest is higher than in the liquor side of the effect the condensate will be pressed back to the liquor again through the leaking tube and consequently cut down considerably on the efficiency of the evaporator. Indications of leaky tubes are found in the drip when the evaporator is shut down.

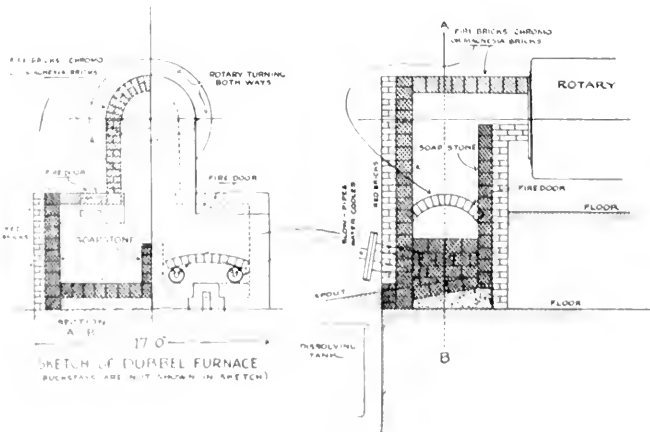
The next department to be considered is the **Black Ash Room, Furnace Room, Recovery Room.**

In the recovery room the heavy black liquor is worked over into green liquor and, to make up for the losses, salteak is added. To get a still higher density of the liquor after it has left the vacuum evaporator it is fed to the disk evaporator. Of those two are commonly used, the Enderlein evaporator and the Carlston evaporator. The former, invented in 1887, is the older of the two and most in use. The difference between the two, in a broad line, is that in the Enderlein evaporator the direction of the gases passes through a radial to the disks whereas in the Carlston evaporator the direction is axial. As to which one is the better of the two may be a matter of opinion, but the Enderlein evaporator is in my opinion simpler in construction; the bearings are the better protected; disks easier to change; it offers less resistance to the draft, while giving the same evaporating surface and perhaps more as the evaporator can be made as long as wanted and disk rolls added.

The purpose of the disk evaporator is not only to evaporate the water, but also to give the gases a washing and catch as much as possible of the salts mechanically carried away in the gases. The velocity of the gases in the disk ought not, therefore, to be too high; this the width of the evaporator takes care of. A certain amount of carbonizing takes place as well. With natural draft three disk rolls have been considered a good medium; using a fan four-disk rolls may be used to advantage. To lessen loss from leaks the body is made of iron below the center of the disk roll and then lined with bricks. The brickwork goes to the top of the disk roll, the top being covered by sheet iron, bent according to the disk roll causing the gases to turn over and mix before entering the next roll. Newer disk evaporators have been made of all-iron without any lining and have been found to work satisfactorily. The radiation on the brick-lined disk evaporator is of course much less, but the all-iron disk evaporator is lighter in construction.

From the disk the heavy black liquor is fed into the rotary by a 4-inch water-cooled pipe and evaporated down to black ash. The rotary, invented in England in 1853, consists of an iron shell 7 to 9 feet in diameter and 15 to 30 feet long, 9 x 20 mostly used, with a larger opening toward the furnace and a somewhat smaller one toward the disk evaporator. To protect the rotary it is lined with bricks. The lining is made in several ways and different kinds of bricks are used. Some rotaries are lined heavily toward the disk evaporator and less heavily toward the furnace making the inside tapered for a better feed, but this will only make the rotary unnecessarily heavy and put a heavy strain on trucks, rails and gears. The black liquor may even run too fast over toward the front and prevent a desired gradual drying out of the black ash. Two courses of bricks on short edge the whole length of the rotary, that is with a thickness of about 9 inches have given satisfaction. A lining of common red bricks, well burned, wedged tightly with a mortar made up of cement and sand will give a lining that will stand up as well as any and better than certain expensive linings like firebricks and fireclay.

The lining nearest to the furnace is most exposed to wear on account of the heat and mechanical wear from the ash rolling and sliding down when the rotary



turns over. Here one course of bricks will have to be renewed about once in nine to twelve months. On the other part of the rotary, two-thirds to three-quarters of its length, the lining will stay up for a long time. Of course the feeding of the black liquor to the rotary is of importance as an irregular feeding of the rotary will shorten the life of the lining. Black ash that is too dry indicates that a burning of the black liquor is taking place in the rotary, which will expose the lining and overheat it, and when a lot of black liquor is fed to the rotary and touches the overheated lining, it will have a bad effect on it. A good black ash should not be too dry. It ought to contain enough moisture so that it can be balled together. A fine, powdery black ash contains less combustible matter and will pack hard in the furnace where a moist black ash will be porous. A greater amount of salts will be carried away by the draft when the ash is fine and dry, the reduction will be poorer and the result in general will not be so good. A black ash that is too wet is as bad, since it is almost impossible to handle; it will run in the furnace and plug blowpipes and spout. Therefore a careful feed to the rotary of black liquor, as even as possible, will result in a good run and protection of lining in the rotary. The lip or lips of the rotary are lined with fire bricks as these are exposed to direct fire. The black ash from the rotary is shoveled into the furnace mixed with salteake to make up for loss in salts. Devices have been tried to get an automatic feed from rotary to furnace, but up to the present nothing satisfactory has been found. This arises from the fact that the black ash from the rotary is very difficult to get to an even consistency, and it consequently will plug and gum the apparatus used.

The construction of a Dubble furnace is shown in Dubble furnaces with fire doors on top have advantages of their own. They are easy to fire and keep filled whereby a combustion in the mass takes place. When black ash is kept low in the furnace, a combustion more on the outside of the mass takes place and the brickwork has to stand up against a strong heat and the reduction will be less efficient. One of the losses of salts in the furnace is caused by the decomposing of salts by too strong heat through driving up the air pressure in forcing the furnace. The blowpipes ought to be large enough to supply sufficient air for a combustion without having to raise the air pressure higher than six to eight inches of water. Too much air blown in the furnace retards reduction and there may even be a partial oxidation. A poor reduction will result in a non-conversion of the salteake to sulphide in the green liquor. As sulphate has no value in a cooking liquor the less there is of it the better. It only brings up the density of the liquor and makes the causticizing process more difficult. Another source of loss occurs when the air blast is too full and strong. When this is the case the ash, especially when very dry, will be blown in the draft and carried away through the chimney.

The molten salts from the furnace are received in a tank partly filled with wash liquor from the causticizing tanks. When the smelt touches the liquor, explosions take place and the hotter the liquid becomes the stronger these are, and the greater quantity of smelt is running in the dissolving tank. These explosions splatter around the liquor and cause a loss. The dissolving tanks ought to be constructed so that

the spattering out of liquor is eliminated as much as possible. If any quantity of the liquor is spattered up on the spout on the furnace it will spoil the spout. To overcome all this the smelt has been let out on sand for cooling and then put in the dissolving tank, but this has also its disadvantages in the higher cost of handling and because the reduced salts from the furnace oxidize very rapidly in the air.

**Causticizing Room.**

Here the green liquor from the dissolving tank is received and worked over in white liquor, or causticized. The main loss here will be in the lime sludge. After causticizing, the liquor is allowed to settle and is then drained off. The settlement or lime sludge left in the tank is then stirred up with water or with liquor from a previous wash and left to settle before drawing off. This is repeated several times and at last the lime sludge is dumped into the sewer. From this it follows that the more lime sludge there is and the lighter it is the harder it is to wash free from salts and the more of the salts will be retained by the sludge going to the sewer. A filter press is here of great help, but as no filter medium, that would stand up against the strong liquor and work satisfactorily, has been found, the process has to be divided up into two operations. First is the decanting of the strong liquor and then the pressing out the sludge in the filter after it has been stirred up with a full charge of water. In this way practically all soluble sodium salts in the lime sludge are recovered.

**The Dubble Furnace.**

The construction of a Dubble furnace is shown in the accompanying sketch. Each combustion chamber has a bottom area of 5 x 6=300 sq. ft. Two water-cooled blowpipes, 4", supply the air for each chamber. Bottom and sides are lined with soapstone, 12" thick. Fire bricks are used for arches. Arches are only 9" thick, which may have some effect on them as they are kept cooler than a thick and heavy arch would be. Chrome and magnesia bricks are better and last much longer, but are or were, impossible to get. A thin arch like that does not of course last so long as a thick arch, but relative to the thickness it will last longer and is much easier to replace. To make an easy removal of the torn down bricks, in renewing arches, the space between the blowpipes is arched over so that it can be opened up without spoiling the rest.

**ST. MAURICE BEAT LAURENTIDE.**

Three errors and six hits gave St. Maurice seven runs and the game, in the eighth inning at Cape Madeleine on July 11th, against the Laurentide A.A.A. The final score was 7 to 9. Through their victory, St. Maurice went into first place in the St. Maurice River Valley League.

Score by innings:	R	H	E.
Grand Mere	000	000	000-0 4 4
St. Maurice	000	000	07x-7 7 2

Batteries: Timins and White; Reynolds and Keefe.  
**STANDING OF THE LEAGUE.**

	Won	Lost	P.C.
St. Maurice	3	2	600
Laurentide	3	3	500
Three-Rivers	1	2	333

### PROPOSE CELLULOSE SECTION OF A. C. S.

Under the able guidance of Mr. Jasper E. Crane, a Cellulose Symposium was organized as a part of the program of the Division of Industrial and Engineering Chemistry at the St. Louis meeting of the American Chemical Society last April. One of the objects of this symposium was to ascertain whether a Cellulose Section, if formed, would secure the interest and support of a sufficiently large number of chemists. The object of such a section would be to promote intercourse and co-operation between the chemists in the various cellulose industries. This group constitutes one of the largest and most important of American industries; all branches of it are intimately concerned in the problems of cellulose, and it seems highly desirable to promote technical activity in this country along these lines. The proposed section would serve as a clearing-house for papers and information on cellulose technology, and should also play an important part in promoting research on the chemistry of cellulose.

The symposium at St. Louis was distinctly successful. The interest shown was so great that it was voted to hold a second Cellulose Symposium under the auspices of the Industrial Section at the Chicago meeting during the week of September 6th. At this time, the advisability of forming a permanent Cellulose Section will be considered. An interesting program is being arranged, and a large attendance of those interested in cellulose is anticipated.

Titles of papers or suggestions for the symposium should be sent to G. J. Esselen, Jr., 30 Charles River Road, Cambridge, 39, Massachusetts.

### FLOOD OF PULP MILLS FOR TWIN CITIES.

#### Nipigon Company.

It was announced last Thursday that the Nipigon Fibre and Paper Mills, Limited, would locate their pulp mill at Nipigon and that officials of the company would be in Port Arthur at the end of this week. They will also proceed to Nipigon to look over the site and arrange for construction work.

The new company, which is capitalized at \$1,000,000, is composed of local and Eastern business men. The mill, when in operation, will turn out forty tons of pulp a day. This output is to be increased to 100 tons within a year.

The site selected for the location of the mill is about a mile west of the village of Nipigon, and will be connected by spur lines with both the Canadian Pacific and Canadian National main lines.

The head office of the company will be at Port Arthur temporarily and later at Nipigon.

#### Spanish River Subsidiary.

Fort William, last Friday received a telegram from the Spanish River Pulp and Paper Mills, Ltd., dated Ottawa, stating that arrangements had been completed for the location at the Mission, Fort William, of the pulp and paper industry they have had in contemplation for some time.

This will be a three million dollar industry and building operations are to be commenced at once. It is reported that the new concern will be called the Fort William Pulp and Paper Company and that Mr. J. G. Sutherland is president.

Raw material will be procured from limits to the Northwest of Fort William which have for some time been held privately.

The Spanish River Company will take Kaministiquia power and it is understood their requirements will amount to all the Kam company has to spare, so that future industries locating in this district will have to take Hydro power, unless the Kam company should procure rights for further development which seems unlikely.

#### The Great Lakes Company.

This latter point would settle the controversy that has been in progress for months concerning the right of the Great Lakes Company which procured the Pie and Black Sturgeon Limits, to take privately developed power. With nothing else to take there would be nothing for this company to do but to turn to Hydro Power.

It is further understood that this company, which was first billed for North of Port Arthur and later for the Mission is now likely to locate between the two cities.

The Spanish River industry is the third of its kind announced for this district inside of two weeks, Port Arthur, Fort William and Nipigon each getting one. That for Fort William, however, is much the largest, but there are reports of more to come for one place or the other or both, and it looks as if this district were to shortly become the leading pulp and paper centre of the Dominion. The Kaministiquia Pulp and Paper Co. was referred to last week.—News Chronicle.

### SWENSON EVAPORATOR COMPANY WINS CASE

The recent trial of the Swenson Evaporator Company of Chicago vs. the Minnesota and Ontario Paper Company of International Falls resulted in favor of the former.

Late in 1916, Defendant purchased from Plaintiff some of the machinery required for the pulp end and more particularly the reclaiming end of a 75 ton "Kraft" mill, the purchase totalling the sum of \$170,000.00.

Early in 1919, the Plaintiff filed a suit in the United States District Court at Minneapolis for the remaining amount due in accordance with contract, which was long overdue, claiming about \$40,000.00 and interest.

The Defendant claimed that this money was not paid as the machinery was not built according to contract and filed a counter-claim for damages.

The testimony proved, according to the verdict reached by the jury that the troubles of the Defendant were due to incompetent management and operation, and not to any faulty design or defects in material as furnished by the Plaintiff. It was shown also that the machinery and plant was never given a fair trial, and that similar machinery made by the Plaintiff was giving excellent service at other pulp mills when operating on similar materials.

The case was submitted to the jury June 25th, 1920, and a verdict for the Plaintiff for \$43,862.00 returned the next morning.

### INCREASED CHINA CLAY PRICES.

To meet increased cost of labor, coal, and other materials, the China clay producers have agreed on an increase of 12½ per cent on the prices of all goods of China clay, for the six months from June 30, to December 31, exclusive of the 1s. 6d. extra railway carriage which will continue to be added to the prices f.o.b. Fowey. China Clay Trade Review.

# Business Meeting of the Technical Section

The meeting was called to order almost on time, in the Community Hall of the Spanish River Pulp & Paper Mills, Ltd., Sault Ste. Marie, Ont., June 23rd, 1920. Chairman L. H. Shipman presided, and about 40 members were present. The official welcome of the company had been extended the previous evening, so the meeting got right to work.

## GYPSUM ROOFS

Mr. Howard S. Taylor was asked to begin the program by reading his paper on "Gypsum Roofs for Paper Machine Rooms," as he was obliged to leave early. In reply to a question, it was brought out that the laying of the gypsum roof should be continuous, but that if work must be interrupted, a good bond is made if the old work is left with a rough edge. Mr. Taylor explained to the editor that the Management Engineering and Development Co., which put up the roofs at Espanola and the Sault, had spent a great deal of effort in the design of a successful and economical truss to carry this roof.

Mr. Taylor's paper was published last week.

## WASTE SULPHITE LIQUOR

The second paper on the program was an address by Ralph H. McKee, Ph.D., on "Sulphite Waste Liquor Utilization," which was printed in Pulp & Paper Magazine last week. In the brief discussion which followed, Mr. Stephenson called attention to the fact that the figures presented were on the basis of the U.S. gallon and mentioned that bulletins have recently been issued through the Superintendent of Documents at Washington, and others, on the use of alcohol as motor fuel, which is one of the most promising markets for it. Mr. Hovey asked how the figure of 1,930 gallons of liquor per ton of pulp was obtained. This was answered by Dr. Johnson, of the Hammermill Paper Co., who said: "In discussing with Mr. Holmes the matter of yield of liquor per ton, I said that it would not be possible to obtain more than about 800 gallons per ton, but in order to check this figure up we made some tests and proved that it was possible to obtain as much as 2,000 gallons per ton. In later experiments it was found that between 1800 and 2000 could easily be obtained without any special equipment.

The method of obtaining this liquor is to drain the liquor from the pulp in the blowpit before any water is added, then to add water on the top of the blowpit, obtaining the rest of the liquor by diffusion. On account of the water being present in the blowpit at the time of blowing a certain dilution of the liquor is unavoidable, but this dilution could be reduced by replacing this water by waste liquor. The figures 1,800 to 2,000 gallons per ton refer to original liquor. The waste liquor as it comes from the blowpit is diluted to about 85 per cent of the original concentration."

"The strength of the sulphite liquor that is produced under this process is 6° Be.," Dr. McKee added, in response to a question.

## A CENTRAL RESEARCH LABORATORY.

Mr. Shipman introduced the subject as follows:

Included in new business is the matter of the paper section of the Forest Products Laboratory being taken

over, re-organized and started out on an entirely new basis by the industry, which has been an open question with us now for a long time. The Canadian Pulp & Paper Association has requested that the Technical Section, at this meeting, discuss this matter, appoint a strong committee, who will go thoroughly into it in all its phases, and have a complete, definite and concise report ready in January at the Annual Meeting, with suggestions to the Association, embodying recommendations of the Technical Section.

I have a telegram from Mr. Stadler which I wish to read to the meeting.

L. H. SHIPMAN:

Regret very much my inability to attend meeting of Technical Section. Referring to your letter of the 20th, re Forests Products Laboratory, have looked over this matter from various angles but unable to give you a positive reply as the interests to be involved by having the laboratory taken over by the industry will be so different on account of the various products manufactured. As far as I can see only an expression of different opinions at the meeting can be used by the committee as a basis for drawing up a proposition. The Belgo Company is willing to support such a movement but in working up the proposition for operating the laboratory by the association the amount involved must be limited and the scope of work to be done clearly defined. With best wishes for a successful meeting.

JOHN STADLER.

I wrote a number of letters a few months ago for an expression of opinion on this matter, and have several letters from prominent men in the industry to aid us and our committee which will be appointed, to go into this matter. I do not know whether we can take the time to read them all, but will go over as many of them as possible.

A letter from Mr. Thorne reads:

I have also received the program for the meeting June 21st. to 24th., and I must give you and your company my compliments for the liberal way in which you are treating the Technical Section members. I just had a party of eighty, of whom fifty were American bankers, visit us in Temiskaming about a week ago, and I can therefore realize the amount of work it takes to carry out a program such as you have laid down successfully, but I know that anything Col. Jones supports will be supported liberally.

As to the discussion of the future development of the Forest Products Laboratory, I should think that this preferably should be had at a meeting not connected with this visit. It may be too bright and too warm a day to sit down and thrash out such a difficult proposition as this.

I also think this is entirely too difficult and entirely too important a matter to be discussed in a hurry.

It looks to me as if it would be very much better to appoint a committee consisting of five men to prepare for a meeting. Of this Committee I would suggest that Mr. Chaboon be a member, not only because he is President of the Pulp and Paper Association, but because he is an important figure in the industry, and with his personality he is able to reach pretty far.

Dr. Bates should also be a member because he knows more about this matter than anyone in the country.

It would also be well to have the Minister appoint a member of this committee as the Government will eventually have something to do with the matter. In fact, would it not be well to have the Minister appoint this committee himself, but from names suggested by us, thereby giving the committee more weight?

The paper business may look very prosperous today, but in three years from now, maybe sooner, maybe later, we will have a business reaction, and the question is, will the pulp and paper mills at such a time be able to support a laboratory liberally enough? Some of the larger companies will, but the smaller ones will not, and the slackers may have a bad influence.

A laboratory of this kind, in my opinion, should be supported by the Government, because its work is for the benefit of the whole country, not of this industry alone.

The German Government started a laboratory of this kind, maybe on a broader scale, and ran it with success. The Federal Government may be able to run it with success in this country, but so far it has not and it therefore may be wise to take up the matter with the view of making the Pulp and Paper Association responsible for the management of this laboratory.

However, as this laboratory is for the benefit of the whole country it naturally should be supported by the Federal Government and it seems to me that it may be possible to let the Association take over the management and the responsibility for its success with the understanding that the Ottawa Government support the laboratory with a certain percentage of the cost.

There are no doubt a number of ways in which this laboratory could be re-organized, and these should all be carefully considered before any one is adopted, and it seems to me that a committee could work out these different ways and make a study of them.

Maybe it would be well to discuss this matter at the Soo and have the meeting advise the appointment of a committee to go further into the matter.

Thanking you for your kind letter and invitation, I remain,

Sincerely yours,

THE RIORDON PULP & PAPER Co., Ltd.  
C. B. Thorne,

Vice-President.

Now we have been requested by the Association to go thoroughly into this matter. It is a simple proposition and should be tackled as we would any problem in our own company before we put a suggestion to our management we want to work out the problem and have it in definite, clear and concise shape.

We have here this morning our friends Mr. Hovey and Mr. Bryant, who formerly were in the Forest Products Laboratory; also Mr. Van de Carr from the Laurentide Company, and I would like to ask these three gentlemen to give us their views on this question.

MR. HOVEY: I have had the matter of the Forest Products Laboratory discussed pretty thoroughly at the mill, and in speaking now I have been asked by Mr. McInnis to express his opinion in this respect. We feel that there are two forms of work to be done at

the Laboratory for the industry, one is direct and the other is indirect. Now I cannot see much hope for the direct work ever working successfully at a central laboratory, and if we are going to accomplish the indirect work, on which we want to get the best results, we feel that in the first instance, the heads of the Government should be approached. They should be approached and the matter put before them in very clear detail and if we can receive their support, then start from that basis.

We feel that one man in charge of the Laboratory should be of the organizing type; a man who can deal with the companies and make them understand thoroughly what is going on and also that they can get work done at the Laboratory.

In connection with the handling of the work, we feel that there should be a consultation every few months with all the heads of the technical departments in the mills. These heads will be informed of each problem that is being worked on, will receive the reports and will study the reports, and in every way try to forward the work of the Laboratory. Now if that can be done it would probably work out allright, but to do that it means the very closest kind of co-operation. But if we cannot get that co-operation we feel that there is not much use in having anything but small laboratories doing fundamental work at the mills, with probably a small central laboratory. We feel that it is better to go ahead on that small scale than do nothing at all. On that basis Mr. McInnis has asked me to say that Abitibi is prepared to subscribe whatever sum may be decided upon. As regards the question of a central laboratory we feel that its success will depend chiefly on the type of management that might be at its head and the actual support of the heads of the companies.

MR. BRYANT: In connection with the Forest Products Laboratory as I see it, there are two things that we can do—we can leave the thing under the Government or we can ask the Pulp & Paper Association to take it over. If we leave the Laboratory under the Government control I think what we should do would be to ask someone in proper authority to take it out from under the Forestry Service. Another thing that should be done is to take it out of the Civil Service. I make these suggestions because of lack of interest on the part of the Forestry Service and lack of ability on the part of the Civil Service to secure men of proper standard. You all know the conditions under which Civil servants work—two men are located at a desk and no matter what they do they both receive the same salary. I think if it is left under the Government it should be recommended that the Industrial Research Council take the thing over and be made responsible for it.

I say for the Laurentide Company that we feel that if the Association does take this laboratory over the laboratory should be located in some central position relative to pulp and paper mills, preferably in Ontario or Quebec.

Under these conditions, although we do not think the thing will work, Laurentide Company is prepared to back the thing to the limit today.

MR. CARRUTHERS: As I understand the history of the Forest Products Laboratory as administered by the Government, one of the chief drawbacks seems to be, in the first place, that they insist on Canadians holding the head or executive positions. Now I



would be the last person in the world to discredit the ability of a Canadian, but I feel that this limitation should be thrown off at once so that we can step into the field and secure the very best man possible, so that he would not be a man who is merely taking his lead from the industry but rather giving lead to the industry. Another feature is the limitation of salaries by the Government. We all understand it—we cannot hire a man with ability to hold any position and work for a mere pittance. He has got to have a good salary, a salary which will warrant or call forth his best efforts.

I know that the industry is prepared to support and support liberally, the Forest Products Laboratory if put on a proper basis. The matter of organization is one of very great importance. Someone has intimated here that we should have two men at least who would be leaders in this work. If the first of these could be a leader in research work then the other man should be an executive who is in very close touch with the paper industry in Canada. These men, I am prepared to admit, are difficult to get but I feel that if we would offer the necessary inducement in the way of salary that we would secure them.

Personally, I am in favor of the industry taking over the Laboratory for I feel sure that if you were doing good work the Government would come forward and support it.

MR. WATERS: Gentlemen, I am not prepared to make any definite statements regarding this matter. I think Dr. Bates has been handling it. I think, however, that Price Brothers would be willing to back to the measure financially, according to any recommendation that the committee may make.

COL. JONES: From the point of view of Spanish River we are in favor of laboratory work, of course,

The Forest Products Laboratory, it seems to me, hasn't functioned properly for the paper trade and something is needed. I am not a believer in the sudden building up of laboratories; I think laboratories should follow the job. When we started our research department we established it by getting a vacant room and we are trying to work from that up, so that I think, in the first place, when we discuss laboratories we should have firmly in our minds what we can do in this respect.

Naturally, in a technical association they should have something concrete and definite to recommend to them. The Canadian Pulp and Paper Association represents the executive, the managerial part of the business and they are the ones who look primarily over the new proposition for bettering conditions. They will say "what are you going to do in the Laboratory, what is it going to cost, how is it going to be managed, etc.?"

The Technical Section should give the matter its most careful consideration. It appears to me that they should select the wisest and strongest committee they can get and they should first consider the matter from the point of view of any information they can get and then ask the Association to appoint a like Committee to meet with them for a full discussion from all points and angles. Discuss it from the point of view of the paper trade taking over the Laboratory, discuss it from the point of view of the Forestry Branch of the Government operating it in conjunction with the paper trade.

To be of most value to the companies interested, the work, and the results secured therefrom, must be of a research nature. It must be work that is not done in our local laboratories. The work of our local laboratories must continue, so the work of this central



Those in the picture:—Dr. Ralph H. McKee, A. A. Holmes, J. N. Stephenson, A. L. Dawe, C. D. Waters, Alex. Beique, D. L. McLeod, F. A. Garrett, F. L. Darrell, D. Boyer, E. G. Cameron, O. F. Bryant, V. Del-Vaux, F. McHenry, F. Barnes, G. Meerbergen, C. R. Van de Carr, T. J. Keenan, N. D. Paine, D. Crabtree, R. B. Wolf, B. Johnson, A. O. Bownes, E. B. Slack, George Carruthers, A. P. Costigane, T. L. Crossley, F. C. Clarks, Ross Campbell, D. R. Miller, L. E. Kendall, T. E. Kloss, R. W. Sterns, M. W. Davis, R. W. Hovey, J. Haugerod, C. A. Moyle, L. H. Shipman, Col. C. H. L. Jones, S. S. Berger.

laboratory, as I see it, must be of the progressive research type.

This committee might determine that perhaps an advisory committee from the paper trade of Canada, having proper powers vested in it, could obtain probably the very best results from the Laboratory being under the Industrial Research Council. That is to say, the Government would own the Laboratory and be responsible for running it but an advisory committee from the paper trade would indicate or direct the program of work that should be carried on in it and the committee attend to the distribution of the results of the laboratory work in each program so carried on.

Now to sum up. Spanish River wants to take part in anything that is good that is taking place in the industry. It wants to have determined if it should be a laboratory of the paper trade or whether it should be a laboratory of the Industrial Research Council, and when this joint committee or any committee that is appointed determines that a central laboratory of the paper trade is the thing, then we will support it. In that event, with great wisdom, there should be made up some rules of procedure to be followed in connection with securing the type of man who should carry on the work because a good deal of money can be spent and a great deal of useless work can be done unless it is wisely directed by the very best type of men. The committee should also deal with expenses, and particularly expenses pertaining to the salaries of the men in charge of the work. I should say, without any hesitation, that we should be sure to get the very best there is; anything that is second class should not be considered at all.

Spanish River in that case, would be willing to contribute its share, whatever that may be, towards securing the very best man for the work.

MR. SHIPMAN: Col. Jones has suggested that perhaps we might have a committee meet with a similar committee selected by the Association. Our committee should be a technical committee and has necessarily got to be a strong one if it is to be of any use and I do not believe that in this room this morning, by either discussion or ballot, we could arrive at the best committee and your chairman would like to have power given him to appoint a committee after due consultation with the executive.

It was moved by Mr. Carruthers, seconded by Mr. Slack, that the chairman be empowered to select a committee after due consultation with the members of the executive.—Carried.

Reports of committees will follow next week.

#### PORTER LEAVES SYRACUSE FOR A. P. & P. A.

Syracuse, N.Y.—O. M. Porter, instructor in forest engineering, has resigned from the New York State College of Forestry faculty to go to the American Paper and Pulp Association at a greatly increased salary, as assistant to Dr. Hugh P. Baker, former dean of the College of Forestry.

The resignation is not only one more evidence of the manner in which the industries are looking to the forestry profession for men for practical business life, but will mean the placing of one more trained forester in the paper industry which offers great opportunity for the practical application of forestry principles.

Mr. Porter came to the college in 1917, but soon left to become a private in the forest engineers, where he rapidly won promotion being discharged with the rank of captain, after extensive service in France.

#### LAURENTIDE FORESTRY POLICY DECLARED TO BE WITHOUT EQUAL.

Mr. M. A. Grainger, Chief Forester of British Columbia, accompanied by Mr. William Turnbull, timber commissioner for the same province, visited Grand-Mere as guest of the forestry department, en route to London to attend the Imperial Timber Conference which takes place there this month. Both gentlemen were enthusiastic over the reforestation work and experimental work carried on by the company and stated that they believed more real substantial forestry work was being done here than by any government of private concern in the Dominion.

Mr. Grainger is a graduate of Cambridge University and has written a book called "The Woodsman of the West," which is an excellent volume on forest problems. He stated that an aerial fire patrol is to be established in British Columbia in conjunction with the Air Board.

The Imperial Timber Conference to be held in London will be largely attended by all men interested in forest questions, as all policies affecting timber in the entire British Empire are to be discussed and voted upon.



SIR LOMER GOUIN,  
Ex-Premier of Quebec, recently appointed Director of the Laurentide Company.

#### FOREST FIRES REPORTED.

Quebec, July 8.—Mr. C. G. Piche, chief of the Forestry Department, has received information from Indians living along the Upper St. Maurice river, near the Hudson Bay basin, that forest fires are devastating those immense areas. Mr. Piche declares that prompt protective steps will be immediately taken.

#### FORESTERS TO VISIT GRAND'MERE.

The Society of Northeastern Foresters, comprised of the best known men in the profession in the United States, university professors, and foresters employed by the United States Government, certain states and some railways, will visit the company nursery at Proulx and look over the forestry operations of the company for three days beginning July 27. There will be between thirty and forty in the party.

## British Trade News

(From Our London Correspondent).

London, June 25, 1920.—The newspapers are keenly interested in the shortage of newsprint and the supplies of pulps just at the moment. Never in the history of printing have such subjects been given such attention as they are receiving now, for the reason that publishers are finding themselves in a tight corner for paper. Needless to say, suggestions for meeting the shortage of newsprint and good quality printing papers are numerous. All kinds of raw materials for pulps are spoken of—raw materials investigated 20 and 25 years ago—and they are mentioned as the real solution to the present difficulties. Napoleon once said that "a soldier marches on his stomach." A newspaper is in the march of progress when it has good newsprint supplies, but, if it is neglected through want of forethought—and this is what is occurring in British newspaper circles—it will collapse as surely as the soldier, if his "inner man" is not replenished. It is astonishing to find today the ignorance that prevails as to what the pulp and paper manufacturers have been doing in the past to conserve supplies and secure raw materials. Newspapers have no conception of it and they think a pulp mill can be run up like a printing-room in a few weeks and set in motion. One gentleman writes to the "Newspaper World" as follows:—"The real difficulty is pulp. The situation will not be relieved until the output of pulp is increased. This can be done in two days: first, by getting all the pulp mills in Central Europe to work again and, second, by putting down more pulp mills in Canada and elsewhere. Meanwhile, the Bamboo Pulp Mill in Burmah, say that they can supply pulp equal to sulphite at £15 per ton in London. It appears that Nelson and Co., the Edinburgh publishers, are already constructing a bamboo pulp mill in India, not a big affair, but a pulp mill all the same." We have always recognized the valuable work and the valuable investigations of Mr. W. P. Raitt, of the Indian Forestry Department, into bamboo as a pulp wood, and I would like to hear what he has to say on the price of £15 in London. One agrees that Canada can do with more pulp mills, but will the wealthy newspapers of the United Kingdom support them and put the money down for initial outlay? History tells us that in the past they were printing on German and Scandinavian newsprint—and now they are bitten to the core. Indeed, the newspapers that wanted the foreigner placed on the same level as the Canadian in the British markets, are now crying out "Trade within the Empire" and in the next column they had an announcement that "owing to the shortage of newsprint" their size "will be reduced" to so many pages. If the money that had been sunk in Scandinavia and Germany and Austria in the past had been invested in Canadian pulp and paper; and if they had not allowed these countries in the past to take the place Canada occupied in the market, British newspapers would not be in the plight for newsprint and pulp that they are in today.

### Labor demands.

This week the paper mill owners met representatives of the Amalgamated Society of Papermakers and the National Union of Printing and Paper Workers to discuss the recent request of the workers for an increase in their wages. If the request is granted it will mean an increase in the cost of paper.

The Scotland paper mills are in a happy position just now. This week large shipments of esparto have arrived from Africa and Spain, which will tend to relieve the anxiety that prevailed some time ago.

### A New Reed Mill.

At the 17th ordinary general meeting of Albert E. Reed & Co., Ltd., Mr. A. Ralph Reed presided. Reference was made to the new mill that the company is building at Aylesford, in Kent, and it was mentioned that work was going apace, railway sidings and a long concrete wharf having recently been constructed. Building operations were in full swing and a large quantity of machinery and plant had been ordered for the production of paper. Mr. Reed said they had left no stone unturned to secure the best obtainable, both in design and equipment, and heavy as the initial outlay would be, they are confident that the natural advantages of the site, and the economy resulting from up-to-date equipment would more than justify the expenditure and greatly add to the prosperity of the company. It was also pointed out to the meeting that the trading profit of the company was not quite so much as in the previous year. This was due to the company not having advanced their prices so much as their manufacturing costs had increased. The company had taken into consideration the position of consumers in regard to high prices and the directors had been content to sell rather below the actual market prices, which they might have asked for and obtained. At all the Reed paper mills the system of three shifts, of 8 hours each, is now in vogue which has compelled the company to promote semi-skilled men to most highly-skilled occupations, but still the output was maintained.

### Seaweed as Pulp.

Seaweed that has been taken from the river Thames was recently treated at the Thames Paper Company's Laboratory and the mill chemist said it was useless as a sample, cellulose was not worth estimation and the amount of fibre was practically negligible. In view of the companies that have been formed in Italy and Japan for exploiting sea weed, this information from the Thames Paper Company is interesting. The Trade Board says that it is probable the sea-weed is of a different nature from that of the sea-weed found round the East Coast of England and they are instituting further inquiries into the subject.

### Boards from Canada.

The following were the imports of boards from Canada in May:—

Strawboards	22	11
Millboards	735	18
Card and Paste Boards	50	12

The pulp market is dull, buyers being well supplied. More attention is being given to a reduction in prices, but the general opinion prevails that a considerable time must elapse before valuations ease off. Both the chemical and mechanical markets show this dullness. Groundwood is still on the scarce side. Small shipments of sulphite continue to arrive from Canada. Prices today are about as follows:—

Bleached sulphite	£80 to 84
Easy bleaching	62 to 63
Strong sulphite	52 to 54
Kraft No. 1	52 to 53
Kraft (strong)	40½ to 45
Groundwood	19
Groundwood dry	37



## Technical Section



### NEW MEMBERS.

The Technical Section has elected the following new members:—Junior members, Donald L. McLeod Esq., Alfred G. Jacques; Associate Member, H. D. Boyle Esq., all of Price Bros. and Co., Kenogami, Que.

### REVIEW OF RECENT LITERATURE.

**B.9. Forest resources of British Columbia.** A. L. Clark of Dallas, Texas, *Wes. Lumberman*, April, 1920, p. 29. Reply to a former article regarding the amount of timber in British Columbia; argues that only a comparatively small proportion of the total stand is commercially accessible.—C.L.

**B.9. Timber conservation.** H. Bromley Coleman, *Pacific Coast Lumberman*, April 1920, p. 27. Aerial surveys of forest resources; aerial forest fire patrol; cutting regulations; methods of logging; slash disposal reforestation.—C.L.

**B.9. Protecting Canada's forests.** *Pacific Coast Lumberman*, April 1920, p. 37. A summary of the annual report of the Committee on Forests, Commission of Conservation.—C.L.

**B.9. Radical Reforms to Check timber wastage.** F. J. D. Barnjum, *Can. Lumberman & Woodworker*, February 1, 1920, p. 47. Shows that the forest resources of Canada have been greatly exaggerated and argues that the annual growth of timber is more than balanced through loss by fire, insects, decay, etc. Predicts that due to the rapidly increasing shortage of supplies, both stumpage and lumber prices will continue to rise.—C.L.

**B.9. Canada's lumber from national viewpoint.** U. K. Wicksteed, *Can. Lumberman & Woodworker*, February 1, 1920, p. 56. The alleged inexhaustibility of forest wealth is a veritable myth. More timber has been wasted and burned than utilized. Two alternatives face the lumber and pulp companies at the present time: The first, the slaughtering of their limits, which would double their existing output for a short while; the second, which is based on conservation, will result in a diminished annual yield and immediately higher prices for lumber, pulpwood and newsprint. Canada is in a position to make conservation both possible and profitable. Need for the inauguration of a system of handling our forests on a sustained yield basis. Need for planting; fire protection, and intelligent regulation of methods of cutting.—C.L.

**B.9. Future of Quebec in the lumber industry.** Hon. Honore Mercier, *Can. Lumberman & Woodworker*, March 15, 1920, p. 68. Province has 45 million acres of timber lands under license, and 75 million acres of unlicensed forest lands. Complete forest survey urgent; development of great natural resources; bright future for the pulp and paper industry.—C.L.

**B.9. Some reconstruction problems in Ontario.** W. F. V. Arkoon, *Can. Lumberman & Woodworker*, May 15, 1920, p. 69. Necessity of true forest inventory of the Province. Protection from fire and waste and greater utilization of what we now possess is urgent.—C.L.

**B.9. Report of annual meeting of the Canadian Lumbermen's Association held at Quebec, February 4 and 5, 1920.** *Canada Lumberman & Woodworker*, February, 15, 1920, p. 40. Text of resolutions adopted, including one endorsing the work of the Commission of Conservation in conducting a survey of the forest resources of the country and the investigation of forest reproduction. Summary of papers and of addresses at the banquet.—C.L.

**B.9. Foresters and Lumbermen hold conference.** *Can. Lumberman & Woodworker*, Feb. 15, 1920, p. 61. Summary of proceedings at the annual forestry conference at Montreal, January 28 and 29; Quebec Forest Protective Association and Woodlands Section of the Canadian Pulp and Paper Association. Disension by G. C. Pielch, on Railroads and Forest Fires. Reports of results of slash burning experiments, with indications of costs. Resolutions looking toward better forest protection and conservation. Disension of damage by spruce budworm. Need for a general survey in eastern Canada of burned-over lands, to facilitate a prediction with regard to the future crop. Research work under way by Commission of Conservation, New Brunswick Forest Service, Quebec Forest Service, Laurentide Company, Bathurst Lumber Company, Riordon Pulp and Paper Company, Dominion Forestry Branch and Ontario Forestry Branch.—C.L.

**B.9. The forest as Finland's money chest.** *Canadian Forest J.*, January 1920, p. 7. The Finnish forestry department was created in 1863. In 1910, Finland exported \$50 million worth of forest products this being 80 per cent of all exports.—C.L.

**K.10. Treatment of paper stock.** Fr. patent No. 499,415, May 12, 1919. J. A. DeCew, Canada, and R. J. Marx, England, *Papeterie*, 42, 269-70, (Mar. 25, 1920). The stock is treated, either in the beater or at some early stage, with  $\frac{1}{4}$ — $\frac{1}{2}$ % of Na aluminate. This improves the retention of size and color and decreases the sticking of the sheet to the felts and presses.—A.P.-C.

**K.10. Colloidal rosin in beater sizing.** John Traquair, *Paper*, 26, 185-6 (1920.) As account of experiments on the colloidal precipitation of rosin in beater sizing, showing the advantage of adding a colloid such as feuloid or glue to the rosin size, which results in a much harder sizing, showing the advantage of adding a colloid such as feuloid or glue to the rosin size, which results in a much harder sizing for a given amount of rosin, or an equally hard sizing with a greatly decreased consumption of rosin. This is due to the fact that the feuloid or glue causes the rosin aluminate to be precipitated in a colloidal, i.e., very finely divided, state, so that the particles are spread out over the fibers to the maximum extent.—A.P.-C.

**K.12. Elongation and shrinking of paper on the machine.** A. Vander Stichel, *Papeterie*, 42, 270 (Mar. 25, 1920). In the manufacture of watermarked papers it is useful to know the changes occurring in the sheet during its manufacture to determine the proper spacing of the letters or other designs on the roll, and the

diameter of the latter. A wire under normal tension exhibits an elongation of about 5 mm. per running m. A printing paper consisting entirely of chemical woodpulp and made on a machine 1.655 m. wide showed an elongation of 8.05 per cent in the machine direction and a contraction of 5.44 per cent in the cross direction.—A.P.C.

**K-12. Obtaining and regulating static pressure hydraulically.** Fr. patent No. 498,942, March 31, 1917. Léon Thiry, Belgium. *Papeterie*, **42**, 216-7, (Mar. 10, 1920). The patent covers a device whereby a static pressure may be applied to the presses, etc., of a paper machine by hydraulic means instead of the usual counterpoises and systems of levers. By the use of appropriate piping and valves the device may also be used for raising the rolls to change the felts.—A.P.C.

**K-12. Guide rolls for textile and paper machines.** Fr. patent No. 498-436. Emil Schneebeli, Switzerland. *Papeterie*, **42**, 214, (Mar. 10, 1920).—A.P.C.

**K-12. Merits of wide and narrow machines.** *Pulp and Paper*, **18**, 207-12, 237-40 (1920); *Paper*, **26**, 3-7, (1920). An account of the discussion on the relative merits of wide and narrow machines, held at the annual meeting of the Tech. Sec. of the C.P. & P. A., Jan. 29, 1920. R. A. Melnais, Abitibi Power and Paper, leading the discussion in favor of wide machines, and John Ball, Price Bros., for narrow machines.—A.P.C.

**K-23. Paper from bagasse.** Carenee J. West, Arthur D. Little, Inc. *Tech. Engineering News*, Feb. 1920; *Paper*, **26**, 62-4, (1920). A brief description of the manufacture of paper from bagasse at Oloa, Hawaii, and of the use to which the paper is put in cultivating the sugar cane.—A.P.C.

**K-23. Machine for saturating paper.** Fr. patent No. 497-476, March 20, 1919. Chas. W. Mayer, U.S.A. *Papeterie* **42**, 263-9, (March 25, 1920).—A.P.C.

**K-23. Paper substitute for cedar wood.** Fr. patent No. 491,778, Feb. 15, 1919. Cedaroid Co. Inc., U.S.A. *Chimie & Industrie*, **3**, 74, (Jan. 1920). The patent covers a paper or cardboard which imitates cedar wood used for packing such articles as tobacco, and susceptible of imparting to the goods packed therein a peculiar aroma depending on the essential oil used to this end. To the pulp, preferably groundwood as pure as possible, is slowly added in the beater a mixture consisting of H<sub>2</sub>O 25 per cent, oil of cedar 25 per cent, sugar 15 per cent, licorice 10 per cent, vinegar 10 per cent, alcohol 10 per cent, glycerin 5 per cent. An adhesive such as Na silicate, gum arabic, or flour paste may also be added.—A.P.C.

**K-23. Chemicals used for fireproofing paper.** Rev. du Blanchissage; *Color Trade J.*, March, 1920; *Paper*, **26**, 186 (1920). The process of rendering paper flame-proof does not differ essentially from that used in the fireproofing of cotton and similar fabrics. The chemicals employed for fireproofing are (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, NH<sub>4</sub>Cl, CaCl<sub>2</sub>, MgCl<sub>2</sub>, ZnCl<sub>2</sub>, ZnSO<sub>4</sub>, SnCl<sub>2</sub>, alum, borax, boric acid, salts of Al<sub>2</sub>O<sub>3</sub>, and especially those precipitated from a solution of Na aluminate. The most practicable are the salts of Al<sub>2</sub>O<sub>3</sub> of NH<sub>3</sub>. The minimum quantity necessary to render 100 parts of cotton non-inflammable is stated as follows: tungstate of ammonia, 12 pts. (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> 4½; Na phosphate, 30; NaCl, 35; Ca phosphate, 30; Mg phosphate, 30; Mg chloride 4½; Zn phosphate, 20; Zn sulphate, 4½; Al borate, 24; hydrated Al<sub>2</sub>O<sub>3</sub>, 3.8; NH<sub>4</sub>Cl 4.2; NH<sub>4</sub> phosphate, 4½; Na silicate, 50; borax, 8½; Ca chloride, 4.6; Mg sulfate

15; KCl, 45; Zn borate; 20; Al phosphate, 30; boric acid, 10; silicic acid, 30.—A.P.C.

**K-0. Printers' paper troubles.** E. A. Dawe, *World's Paper Trade Rev.*, Feb. 27, 1920; *Paper*, **26**, 53, 82, (1920). A lecture on "Printers' Paper Troubles; or Paper Maladies and Obstacles avoided," before a Brit. association of printers. The author goes into the various troubles experienced by printers, showing how in many cases the cause could be traced to many things other than the paper itself; e.g. the ink used, the conditions of storing, static charges on the paper, improper handling of the paper, etc.—A.P.C.

**M-0. Removing rust from iron.** D.R.P. No. 310, 261. Badische Anilin und Soda Fabrik, Germany. *Chimie und Industrie*, **3**, 54, (Jan. 1920). The rusted metal is treated with dilute acids, except ferro and ferrieyanic acids; and either simultaneously or subsequently with an aqueous emulsion of oil or greases.—A.P.C.

**N-4. Boiler compound.** Fr. patent No. 493,691. Mrs. J. Clavier, nee Jerome, France. *Chimie und Industrie*, **3**, 17, (Jan. 1920). Mix 15 parts of tannin or 50 parts of chestnut, 200 parts of Ba chloride, 25 parts of sugar or 50 parts of molasses. The mixture should have a density of 25°Be. Use 3 kg. per cu.m. This mixture permits the use even of sea-water.—A.P.C.

**N-5. Forest steam circulation for paper mills.** *Pulp and Paper*, **18**, 167-8, (1920); *Paper*, **26**, 60-1, (1920). A description of the closed loop boiler feeding system developed by the Farnsworth Co. of Conshohocken, Pa. The condensation from the paper machine and all other heating apparatus, and the make-up water as well, is held under pressure and returned to the boiler at a high temperature thereby saving anywhere from 10-30 per cent. of the coal. The system eliminates individual traps on the dryers, vacuum pumps, receiving tanks, hot wells, boiler feed pumps, much piping, and maintenance cost. A.P.C.

**R-2. Books for the student of papermaking.** *Paper*, **26**, 58, (1920). A list of the principal books in English on papermaking.—A.P.C.

**R-5. The Russian paper market.** Wm. A. Sullivan. *New York Commercial*, March 20, 1920; *Paper*, **26**, 128, (1920). Points of interest to the American manufacturer in connection with the Russian paper market.—A.P.C.

**R-6. Technical progress in papermaking.** Jas. J. O'Connor. *Paper*, **26**, 99-100, (1920). A discussion of the importance of technical control in the paper industry, and a plea for co-operation between the technician and the papermaker. A.P.C.

**R-12. Handling and costing raw materials.** Fred. C. Clark, M. M. Kiley, H. R. Harrigan. *Paper*, **26**, 139-184, (1920). Papers on How Rags are Handled, The Treatment of Old Papers, Costing and Measuring Pulp, presented at a joint meeting of the Connecticut Valley Section of the T.A.P.P.I., and the Holyoke Division of the Paper Industry, held at Holyoke, Mass., Jan. 19, 1920, together with the ensuing discussions. The papers dealt with the costing of rags, old papers, and pulp, as carried out at the mills of the Am. Writing Paper Co.—A.P.C.

**R-0. Utilization of waste products.** Walter H. Dickerson, M.E., Atomized Products Corp., N.Y. *Paper*, **26**, 97-9, (1920). A discussion of the great importance of the utilization of waste products with a few examples of the innumerable and extremely important uses to which they can be put. A.P.C.

### PRICE BROS. CLOSE NEW CONTRACT.

It is understood that Price Bros., Limited, have effected a large newsprint paper contract with the Daily Express, of London, England, at favorable terms. In this connection it is pointed out that the newspaper which is one controlled by Lord Beaverbrooke, has been anxious for its newsprint supply for some time past and the contract is satisfactory to them, while it is also in line with Price Bros.' policy of enlarging its overseas market.

### EDWARDS ON RIORDON BOARD.

Hon. W. C. Edwards, whose appointment to the board of the new Riordon Company, Limited, as well as the Gatiéneau Company, Limited, is announced, has long been identified with the timber business in the Ottawa district and as he recently stated, only advancing years prompted him to relinquish private ownership of large interests on the Gatiéneau. He is probably best known as president of Canada Cement Company.

### SIR GEORGE BURY LEAVES WHALEN COMPANY

Vancouver, July 11.—Much surprise was created here this morning when the Sunday Sun announced that Sir George Bury had resigned from the presidency of the Whalen Pulp and Paper Company.

Although it had been kept a close secret, the resignation had been in the hands of the directors for several weeks. It is said that efforts have been made to retain Sir George in the service of the company, but he has declined, declaring that he had accepted an appointment in an advisory capacity to certain large interests on the Atlantic seaboard.

It is rumored that Sir George Bury's retirement has been hastened by the probability of the Whalen Company being absorbed after its next annual meeting, on July 29th, by the Fleishacker interests of San Francisco which now control the Pacific mills of Ocean Falls and the Powell River Company at Powell River, both large pulp and paper mills.

At the present time the majority of the Whalen directors are composed of representatives of the bondholders, and these include E. W. Killam, of the Royal Securities Corporation, of Montreal. An effort is being made, it is said, to retain control of the company in Canada, but recently a large block of stock has gone into the hands of the Fleishacker interests, and it is said that control will pass to the latter at the next meeting. This will mean that all the developed pulp concerns on the coast of British Columbia will have passed into American hands. The Whalen Company has three plants at Woodfibre on Howe Sound at Swanson Bay and at Port Alice on Quatsno Sound. Practically all of its pulp is shipped in mat form to the Orient, and the demand in the last year has been so great that the company's earnings under Sir George Bury's direction have climbed over the four million dollar mark.

Each of the three companies is engaged in a different phase of the business. Ocean Falls ships its product in the form of manufactured newsprint almost exclusively to Australia and New Zealand. Powell River supplies the newspapers of British Columbia and the North Western States, including California, while the Whalen mill sends its pulp to Japan and China.

### CANADIAN MILLS DROP U. S. CUSTOMERS.

The New York Globe and the William R. Hearst newspapers have been notified that their paper contracts with the Canadian Export Paper Company will not be renewed at their expiration at the end of 1920, according to Editor and Publisher. The contract of the Globe calls for 12,000 tons and the Hearst contract 27,000 tons.

Jason Rogers, publisher of the Globe, is chairman of the executive committee of the Publishers' Buying Corporation, a newly organized body of newspaper publishers whose purpose it is to buy co-operatively.

It is understood that the Canadian Export Paper Company has taken this action in order that it will be possible for it to meet other obligations already entered into for its 1921 supply of newsprint. Old Australian customers who were cut off last year on account of shipping conditions will again be taken care of for their full requirements of 25,000 tons, it is said. Exports to South Africa will also be increased from 3,000 to 9,000 tons, the amount furnished that market prior to the outbreak of war.

The Canadian Export's explanation of its action in the case of Mr. Hearst and the New York Globe, it is said, is that it has found it necessary to drop new customers to take care of the older customers. The Canadian Export is said to be over 20,000 tons oversold for the current year.

Under an old arrangement it is understood the Chicago Daily News contract for tonnage will be increased 18,000 tons for 1921. The new contract of the New York Times with the Canadian Export, which goes into effect January 1, calls for 45,000 tons but that will be made on special machines. It is reported, however, that arrangements have been made to supply the London Mail during 1921. The Mail has been buying largely on the open market and has never before been a contract customer in the Canadian market.

The action of the Canadian Export will cause the switching of accounts that call for a total of more than 70,000 tons of paper and will undoubtedly throw additional customers for newsprint on the open market for a large part of their 1921 supply.

G. Frank Steele, general manager of the Canadian Export, is now on his way to Europe and could not be reached by Editor and Publisher this week.

Claiming that the newsprint emergency has passed, Canadian newsprint manufacturers are now said to be switching converted mills back to kraft papers. In the face of this, however, they are talking of continued increase in prices with between 7 and 8 cent paper as the outlook for 1921.

The plans of the Publishers' Buying Corporation for co-operative buying are going forward and the membership has now passed one hundred and fifty. This week the corporation announced that it has 250 tons a month to offer, beginning September 1, at 10 $\frac{3}{4}$  cents f. o. b. mill. This week it was also offered 1,350 tons of Scandiravian delivery at 11 $\frac{1}{2}$  cents f. o. b. New York, which was declined at that price.

Mr. Earl Stafford has recently become a member of the engineering staff of Arthur D. Little, Incorporated, Chemists and Engineers, Cambridge, Mass. Mr. Stafford is a graduate of the Engineering School of Tufts College, 1908, and for the past twelve years has devoted his attention largely to hydro-electric developments with particular reference to ore treating plants, pulp and paper mills and light and power companies.

# PULP AND PAPER NEWS

Arthur Beattie, foreman of the Ontario Paper Mills at Thorold, died on July 3rd from injuries received in a mysterious manner. He was found lying on the cement floor of the shipping platform and never regained consciousness. The man's money was found in his pocket and it was evident that robbery was not behind the occurrence. A wife and six children are left. An inquest will be held.

The current issue of the Canadian Gazette contains notice of the incorporation of Clarke Brothers Paper Mills, Limited, by Toronto barristers, for the purpose of carrying on business as pulp and paper manufacturers. The company is capitalized at \$5,000,000 and the chief place of business is at Bear River, Nova Scotia.

For the purpose of operating saw mills, planing mills, pulp and paper mills, the Rolland Lumber Co., Limited, has been granted incorporation by the Dominion Government, with a capital stock of \$50,000 and head office in Montreal. Montreal barristers are named as incorporators.

To carry on a general printing, lithographing and publishing business, the Sentinel Publishing Company, Limited, Toronto, has been incorporated and granted a charter by the Ontario Provincial Secretary. The company is capitalized at \$100,000 and the provisional directors are Grant Cooper, H. A. Hall, R. P. Locke, L. Dillon, R. Hatton and M. Bruce.

Dredging for section 5 of the Welland ship canal is rendering the water of the Lake Erie level of the present canal so roily that it is interfering with the production of paper mills along that waterway. One concern last week had a \$10,000 shipment thrown back on its hands as a result of the unfilterable sediment.

At the sixteenth annual meeting of the Canadian Association of Advertising Agencies held in Toronto officers for the current year were elected as follows: President, Mr. J. P. Patterson of Morris, Patterson, Ltd.; 1st Vice President, Mr. E. Desherats, of Desherats Advertising Agency, Ltd., Montreal; 2nd Vice President, Mr. J. E. McConnell, of McConnell and Ferguson, London; Secretary-Treasurer, Mr. A. J. Denne, of Smith, Denne and Moore, Ltd.; member of committee, Mr. R. A. Baker, of the Baker Advertising Agency, Ltd.; immediate past President, Mr. W. B. Somerset, of A. McKim, Ltd. Mr. W. B. Somerset, the retiring President, occupied the chair and his annual report surveyed the work of the Association during the year, which showed a satisfactory advance in the volume of business transacted.

Commencing with its issue of July 2nd, the Galt Reporter increased its subscription rate from two to three cents per copy and from 10c. to 15c. per week.

The Provincial Paper Mills, Limited, has forwarded notice to the shareholders stating that the stock certificates of the new company are now ready and requesting the certificates of the Provincial Paper Mills Company, Limited, to be sent in to be exchanged. The exchange is on a basis of three shares of new for two shares of old. Half shares are settled for at \$50, being at the rate of \$100 per share.

The death took place in Toronto on Monday of the oldest employee of the Copp-Clark Company, in the person of Mr. James M. Young. With his wife he had spent the week-end in Stratford and while returning he was taken ill on the train. In spite of the infusion of blood from his son Hugh, he succumbed. Deceased was in his 58th year. His father was the late John Young of the Upper Canada Tract Society. He was a director of the Copp-Clark Company. Besides his wife three sons survive.

The rise in Spanish River Securities, the new dividend disbursement scheme of the company and the Dominion Day celebrations were all of secondary importance to Mr. J. G. Gibson, Toronto, Secretary of the Spanish River Pulp and Paper Mills, Limited, during the past week. Competent authorities have pronounced the boy a remarkably fine one. In the shower of congratulations in connection with the joyous event Mr. Gibson, who is an ardent, out-and-out Canadian received two ride jolts. One came when the President of the company wired congratulations from Dayton, Ohio, stressing the point that Gibson, Junior was born on the glorious Fourth and the other when the nurse blandly remarked that the hirsute adornment of the little chap was even then more profuse than that of his father.

Mr. S. B. Monroe of Kalamazoo, Mich., one of the directors of the Provincial Paper Mills, Limited, was in Toronto this week visiting the head office of the company.

Word has been received in Toronto that Mr. R. V. McCabe, who for several years was the popular office manager of the Dominion Pulp Company, of Chatham, N. B., and who severed his connection shortly before the time when it was taken over by the new owners, the Fraser Company, Limited, is starting in business for himself and has formed a partnership with Mr. J. W. Bowers of Glisfield. They will engage in the pulpwood brokerage business.

The agreement between the town of Kenora and the Backus interests re the sale of municipal power to the company for \$335,000 and the location of pulp mills in the town, has been approved and signed and returned to the Kenora council for further approval.

A large new paper machine has arrived at the Ontario Paper Co.'s plant at Thorold, to be installed in the new concrete addition. The company is also putting a new fire proof roof on the main factory to take the place of the old asphalt paper roof. The new office recently built is in use and the factory extension will cover the ground formerly taken up by the office.

Mr. Richard Reece of Melbourne, Australia, and a former member of Parliament in the Commonwealth, has been spending a few days with Mr. George Carruthers, of Toronto, President of the Interlake Tissue Mills, Limited.

The Canada Paper Board Company, Limited, Toronto, was recently incorporated to manufacture and deal in lumber, pulpwood, paper board and all kinds

forest products. The authorized capital is \$5,000,000 and among the incorporators are H. H. Davis and J. S. Beatty, of Toronto.

The Thompson and Hyland Lumber Company, Toronto, have been appointed purchasing representatives in Ontario for the West Virginia Pulp and Paper Co. of New York, in order to supply their mill at Tyrone, Pa. with poplar wood, while the West Virginia Company's mill at Mechanicsville, N. Y. will be supplied with spruce.

Official denial has been given the report current in Toronto that the Howard Smith Paper Company's plant at Cornwall would be closed down owing to the acute coal shortage. The Cornwall manager of the company states that the plant is, and has been for some time past, working to its full capacity, with every prospect of this condition keeping up for some time. The company is also building an immense sulphite mill near its present plant, which will add greatly to the output.

Rev. D. M. Selandt, B.D. of Winnipeg, is the nominee of the Presbytery of Winnipeg for the post of manager of Presbyterian Publications at Toronto, to succeed Rev. Douglas Fraser, who is retiring on account of advancing years.

There is quite an exodus of Canadians to foreign lands. T. J. Stevenson of the Riordon Company and W. B. Stokes of the Forest Products Laboratory are in England. N. E. Wainwright, of Canada Export Paper Co. sailed Saturday with his family for England. Mr. Nickenig of the same company has gone to South America while J. A. Bothwell, General Manager of the Brompton Pulp and Paper Co. and G. F. Stoel, General Manager of the Canada Export Paper Co. have departed for Scandinavia.

Friends of Mr. Kay Crabtree will be glad to know that he is again on the job as superintendent of the Crabtree Division of Howard Smith Paper Mills, Ltd. Although the wound caused by the loss of three fingers through having his left hand caught in the gears of a saw-all, is not completely healed, he is well enough to get around.

### PULP MILL FOR LEVIS.

It is stated that a large pulp plant is about to be erected between St. Romuald and New Liverpool, at Levis, Quebec. The company would begin doing business with a capital of \$5,000,000, under the direction of Mr. John Breakey, a lumber merchant of Breakeyville, Levis. The mills are expected to turn out more than a hundred tons of pulp daily.

### AMERICANS BUYING CANADIAN PAPER STOCKS.

The report is current that Americans have become very large buyers of Canadian paper stocks. The buying from this source has been particularly large during the past week. It is thought a number of newspaper owners in the United States are coming into the market for Canadian paper stocks, hoping by the profits from their holdings to offset the increases that are occurring in the prices for newsprint.

### IN OLD DAYS

A Swede came down from the woods, and, entering a saloon, asked for a drink of good old squirrel whiskey. The bartender said: "We have no squirrel whiskey, but we've got some good Old Crow."

"Oh, Yeh! Well," said the Swede, "I don't want to drink it just want to hop around a little."

### BROMPTON'S STOCK INCREASE.

Following a meeting of the Directors of Brompton Pulp and Paper Company, Ltd., held on June 17th last, official announcement was made of the intention of the directorate to recommend to Shareholders plans for the re-arrangement of capital stock.

It is proposed to increase the Company's common capitalization, presently consisting of 70,000 shares of a par value of \$100 each, to 210,000 shares of no par value, of which 140,000 shares will be immediately issued, holders of the present stock to receive two shares of the new, no par value shares for each one of the old held. The remaining 70,000 shares of the new stock will be held in treasury to provide for possible future financing.

The record and extent of the operations of the Brompton Company are already familiar. It is significant of the present favourable industrial and financial position of the Company that funds for extension at East Angus and elsewhere are being provided out of current earnings.

### CANADA PAPER CO. GOES TO APPEAL.

A. W. P. Buchanan, K.C., on behalf of the Canada Paper Company, inscribed in appeal, in the Court of King's Bench, the judgment of the Superior Court, rendered by Mr. Justice Macleannan, granting the petition of Albert Joseph Brown, K.C., and ordering the company perpetually to refrain from using sulphate of soda, or any other obnoxious compounds calculated to give off objectionable odors, in the manufacture of pulp and paper at the company's works at Windsor Mills, Quebec.

The company submits that the discharge of gases from the mill in question is not injurious to health or vegetation. The process of manufacture of pulp and paper adopted by the defendants is one of the most modern. Carbonate of soda was used up to 1908, but now the use of sulphate of soda is the only process that enables their mills to compete with imported pulp and also with pulp largely manufactured by this process in this country. It is submitted that there is no known process commercially practicable for removing all or even the major portion of the so-called bad smelling compounds and fumes from the discharged gases of sulphate pulp. If the injunction is allowed to stand, appellants say they will be compelled to close their chemical or pulp mill and also a portion of their paper mill, which gives employment to a large number of the inhabitants of the town.

### CARL RIORDON A SUN LIFE DIRECTOR.

Carl Riordon, B.A., Vice-President and Managing Director of the Riordon Pulp and Paper Co., Ltd., and a well known business man has just been elected to the Board of Directors of the Sun Life Assurance Company of Canada.

Mr. Riordon replaces the late Mr. John McKergow, besides being Vice-President and Managing Director of the Riordon Pulp and Paper Co., Ltd. with their extensive interests, Mr. Riordon is also Vice-President Mail Printing Co.; Vice-President and Managing Director Ticonderoga Pulp and Paper Co., Ticonderoga, N.Y.; Director Niagara Falls Suspension Bridge Co., Ltd.; Director Buffalo Contractors' Plant Corporation, Buffalo, N.Y.

Not exploitation but service is the sound philosophy of life.





# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto July 10.—The week in the Canadian pulp and paper trade was characterized by additional advances in several lines of paper, notably some lines of book and manilas. The same general conditions as to shortage of both raw and finished stock prevail, the mills are still months behind with their orders and the stocks in the hands of the jobbers are very low. A number of the jobbers who bought early and built up small reserve stocks are now using their emergency supplies in order to meet the demands of their customers and unless these stocks can be replenished a real famine in some lines seems inevitable. No one can afford to waste a single sheet of paper these days and every scrap is utilized. The bursting of a water pipe in the basement of one of the Toronto publishing houses the other day damaged a number of rolls of newsprint. In normal times the stuff would have been scrapped as useless. But in this instance the damaged rolls were salvaged by a printer who, by careful handling and cutting, made a nice little profit on the deal.

### Pulpwood.

Considerable activity in pulpwood is reported at the present time owing to the high prices prevailing, and in some quarters it is believed that there is a speculative element in the market. There are evidences that certain parties are quietly buying up stocks with the hope of realizing a handsome profit in the fall owing to the scarcity of pulp and ascending values. Contractors report that there will be an enormous cut of pulpwood this fall. Sales of groundwood pulp continue to be made at around the \$140 mark and even higher prices would be paid if the pulp could be obtained. But it requires a lot of digging these days to land even a small shipment and paper mills all over the country are begging for the commodity.

The same conditions apply to chemical pulp, the prices of which remain unchanged with supplies extremely hard to get.

### Newsprint.

As far as can be learned practically all of the Canadian publishers have been supplied with newsprint and are protected for July, August and September at 5½¢ for rolls and 6¢ for sheets on two ton lots or up. It is generally predicted that at the end of the present quarter there will be a pretty substantial rise in price owing to the continued shortage of raw stock and the high prices prevailing for labor and paper ingredients.

### Box Board.

Box board producers are all extremely busy and are months behind with their orders. As yet no decision has been reached by the Canada Box Board Company as to the location of their new plant, although the announcement is expected within a week or ten days. While the officials of the company are guarding the secret, if they have made up their minds, it is generally believed that the choice lies between Toronto and Frankfurt. It is understood that work will proceed

this summer and that the next two weeks will see the selection of a site. In the meantime the company have embarked on a program of improvements at their various mills with a view to increasing their tonnage, although no new machinery will be installed until the new mill is built. The prices of board for the present quarter beginning July 1st: straw board \$121 a ton; Chip board \$121; vat-lined board \$133; filled wood board, \$157; patent coated manila back, \$212; patent coated news back \$197. These prices represent a fifteen per cent. increase.

### Manilas.

Another advance in manilas went into effect on July 1st, the increase representing a cent a pound on some lines and one and a half cents a pound on No. 1 manila. B manila is now quoted at 11c; grey rag 10¾, fibre 12c, and No. 1 manila 12c, a pound. There are no changes in the prices of paper bags.

### Book Papers.

The shortage in book papers is indicated by the fact that a jobber of one of the largest jobbing houses in Toronto, in checking over his invoices this week, found that his bill for book papers for July with one of the mills was just \$1,700 in place of \$30,000 which it would have been under normal conditions. Frequently before the famine days came on this jobber would dispose of twenty five and thirty thousand dollars worth of book stock in a month and he counted himself lucky to have gotten the small proportion that he did. With the beginning of the present month another advance of from ten to twenty five per cent. went into effect with the result that the jobbers are now paying the mills 19¢ for mill-finished book. In a day or two it may be twenty cents a pound and that is about the only grade that it is possible to get at the present time. It is stated that the cheapest paper the mills will be turning out for some time to come will be 20¢ a pound and at that orders are only accepted at the price governing at the time of shipment. The mills have ceased making any definite promise as to delivery and most of them talk of November and December as the most likely months for shipment of orders placed now. Thus the jobbers are buying almost blindly both as to price and delivery and take the mill's word for it that shortage of raw material, the uncertainty of the fuel supply and transportation facilities and the large arrearages of orders are responsible for the unsatisfactory conditions that prevail. The latest price list sent out by the Howard Smith Paper Mills quotes No. 1 book at 19¢; S. C. at 22½¢, and M. F. at 22½¢, and the mill is fully booked up until January.

### Bonds and Ledgers.

Pretty much the same conditions prevail in regard to bonds and ledgers, the jobbers paying a price to the mills for linen record which necessitates a re-sale price of 70¢ a pound. Generally speaking, however, the price range of bonds from the mill to the jobber is from 22¢ to 40¢ a pound and ledgers run from 24¢ to 50¢ a pound.

**Kraft Papers.**

The inordinate demand for kraft keeps up, the product now selling at 12c. a pound. Unable to get manila and fibre papers the trade has been falling back on kraft, a fact that has been mainly responsible for the big demand that has developed for this class of paper. The same conditions prevail in Western Canada. Most of the manila mills in the west have been closed down largely through inability to get raw stock and as a result the eastern kraft mills are being pressed far beyond their capacity. At the beginning of the present month manila and fibre went up another cent. In car load lots now grey or rag or news counter rolls are quoted at \$10.75. "B" manila is quoted at 11c. and No. 1 manila at \$12.50 in car lots Ontario and Quebec points.

**Toilets and Tissues.**

No further increases in the prices of these lines are reported this week but another advance is looked for in most lines. In the meantime all light weight papers, including towels, toilet papers and tissues are firm in price and there is an ever increasing demand for the products of the mills which are several months behind in their orders.

**Rag and Paper Stock Prices.**

	F.O.B. Toronto	
No. 1 shirt cuttings	19c	
No. 1 unbleached cotton cuttings	16c	
No. 1 fancy shirt cuttings	13 1/2c	
No. 1 blue overall cuttings	13 1/2c	
Bleached shoe clip	15c	
White cotton hosiery cuttings	17 1/2c	
Light colored hosiery cuttings	13 1/2c	
New light flannellette cuttings	13 1/2c	
No. 2 white shirt cuttings	13c	
City thirds and blues - repacked, No. 15	5c	
Flocks and satinettes	34c	
Tailor rags	\$3.00	
Gunny bagging	31c	
Manila rope	5c	
No. 1 white envelope cuttings	\$7.50	\$5.25
No. 1 soft white shavings	\$7.00	\$5.00
White blanks	\$5.25	\$3.25
Heavy ledger stock	\$3.80	\$3.90
No. 1 magazine	\$3.90	\$3.50
No. 1 book stock	\$3.15	\$2.80
No. 1 manilas		\$3.25
No. 1 prima manila		\$3.00
Folded news	\$2.35	\$2.00
Over issue, news		\$2.25
Kraft		\$5.50
No. 1 clean and mixed papers	\$2.20	\$1.70
	\$1.65	\$1.60

**NEW YORK MARKETS.**

New York, July 10. The first half of July is the time of the year usually selected by paper manufacturers to temporarily shut down for semi-annual inventories, to make repairs and otherwise to put their plants in order. This year manufacturers are so busily engaged that they are staying closed only for the shortest possible time in which the necessary work can be done, and yet the shutting down of this and that mill in various parts of the country makes for a quieter condition at producing centers.

Consuming markets, however, remain just as active as in the recent past. There are no visible signs of any material let up in demand for paper and board

and the market continues to evince a very strong undercurrent, with prices firmly maintained in practically every instance. In only one corner of the trade can it be said that business has decreased to any important extent, and that is in the spot newspaper market. Daily newspaper publishers are still pursuing a policy of refraining from purchasing newsprint for spot shipment even though such action on their part makes it necessary that they omit large amounts of advertising from their columns. That they are realizing some success in softening the tone of the spot market for print paper must be conceded. Offerings of roll newsprint for spot delivery are more numerous and of greater volume than for some time, yet prices are being held up fairly well. About the lowest quoted on newsprint in the open market is 12 cents per pound and a good portion of the available spot supply is held at a cent a pound or more beyond this level. Supplies have not reached a point where sellers have to compete with each other in finding an outlet for stocks and there is consequently little cutting of prices to effect sales. Demand for sheet news is quite active and high prices are being readily obtained for all the supply dealers and mills have to offer, in the vicinity of 13 cents per pound being the average figure quoted.

Book papers continue in an exceedingly strong market position. There is very little supply of this kind of paper to be had for prompt delivery or for shipment for some months ahead, and mills are operating at maximum, or at as near maximum as prevailing conditions will permit, in an effort to cover the wants of customers. Practically the entire output of book paper over the balance of the year has been contracted for, and most mills are therefore out of the market insofar as regards accepting orders for additional tonnages. It is a well known fact that popular magazines are being obliged to conserve paper in every possible way; editions are being limited both as regards sizes of the publications and the number of copies printed. It is stated that one of the best known weekly magazines which is now issuing 2,000,000 copies a week could well afford to print another million copies if it had the necessary paper. This is the periodical which recently announced no more subscriptions would be received from Canada, it being the idea of this publishing firm to supply domestic readers with as many copies of the magazine in question as it is possible to do under present circumstances. Prices on book papers are firm and the tendency is decidedly toward higher levels. Machine finished book is selling at 15 to 16 cents per pound, super-calendered at a cent higher and lithograph and coated from 18 cents upward.

Fine paper prices have again advanced. About the lowest named on any kind of bond paper today is 20 cents a pound and very few lines are to be had at this price, average quotations ranging around 25 cents on medium and low quality bonds. Writing papers are firm and mills are constantly raising quotations a cent or two per pound. It is proverbial that when other lines of merchandise are in slow demand, manufacturers and distributors increase their circularizing and advertising of their products, which accounts in a measure for the continuance of active demand for all kinds of fine papers. Then, too, export demand is brisk, and there is small question that much more business could be easily effected with foreign buyers had sellers larger amounts of paper to dispose of.



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INQUIRIES SOLICITED.

Wrappings and tissues hold their own in price and are sought in comparatively large volume considering the dullness existing in many retail lines. The board market is characterized by strength and mills are well stocked with orders, some being foresold for three and four months ahead. Local distributors of board say that it is quite a problem to secure additional tonnages, even through regular sources, and there are predictions made that when box makers commence to cover fall requirements in more general fashion prices on board will jump to new record heights. Prevailing quotations range from \$125 up on filled news board and around \$115 for plain chip board.

**GROUND WOOD**—A strong demand continues for ground wood and prices, while mainly nominal as regards spot tonnages, are marked by firmness. Consumers are eagerly searching in all directions for available supplies and are anxiously absorbing the pulp found, seemingly paying little heed to the prices they must pay. What actual market values are is a question. Sales have been made at \$140 and up to \$150, and talk now in the trade is that even higher prices than those have been realized for spot deliveries of prime spruce pulp. The market appears absolutely devoid of sizable accumulations; which is a novelty at this season when grinders usually are operating at capacity in not only covering the wants of customers but in storing up stocks for the fall and winter when manufacturing conditions are less favorable. Everything would seem to point to a further advance in ground wood values later in the year unless some situation arises whereby demand and consumption materially decrease.

**CHEMICAL PULP**—Local importers assert that it is becoming more and more of a problem to secure fresh supplies of sulphite in Scandinavian countries. Manufacturers there have in a great majority of cases disposed of their output for the remainder of the year, and are selling even into 1921, and are devoting little attention to the American market for the reason that better prices are being obtained from European buyers. It is known that bids from consumers on this side of 10.25 cents per pound for No. 1 unbleached Swedish sulphite have been flatly refused, from a quarter to a half cent more being demanded. Bleached sulphite is pretty nearly unobtainable in Norway and Sweden, while kraft pulp is held at strong prices. Such amounts of foreign pulp as are arriving here are mostly all sold before landed, and importers have but scant lots on the spot here to offer.

Domestic chemical pulps rule quotably firm and are being quickly absorbed by consumers whenever offered. Newsprint sulphite continues to sell at 8 to 8.50

cents per pound at pulp mills, bleached sulphite at 12 cents and higher and domestic kraft at around 7.50 cents. There is no semblance of easiness in the market; on the contrary prices incline distinctly upward.

**RAGS**—Paper manufacturers are buying fewer rags at present than for a long time. This apparently is due to two major causes; one, many mills have supplied their requirements for a time through recent purchases, while the second is that because of the inventory and repair period the average papermaking plant is not consuming as many rags at the moment. Were it not for the tight money situation the probabilities are prices would hold very strong but with numerous packers and dealers obliged to come to convert their stocks into cash concessions are being granted to move rags. At the same time, only in roofing rags has the decline amounted to much. New cuttings are firm, old whites are available only at slightly lower figures than heretofore while most other high-grade old rags are selling at close to the top levels reached a short time back. Roofing is now quoted at around 2.60 cents a pound f.o.b. shipping points for No. 1 packing; new No. 1 white shirt cuttings are bringing 21 to 21.50 cents per pound, old No. 1 whites around 15 cents and repacked thirds and blues about 4.50 cents. New washables, fancy shirt cuttings, silesias, lawns and muslins are quotably steady and moving consistently.

**PAPER STOCK**—Firmness in old paper values can probably be attributed more to the woodpulp situation than to any other single cause. Demand is steady and, with the exception of one or two grades, present supplies do not seem ample to fill the wants of buyers. Dealers and packers continue to stress the small amounts of waste paper they are receiving from print shops, department stores and other producing establishments and say they are up against it in acquiring sufficient supplies to cover commitments. This condition has a particular bearing on shavings, old kraft and manila papers and overissue newspapers, and these grades obviously display a firmer price tone than others. Hard white shavings of No. 1 quality are quoted at 8 cents a pound at shipping points. No. 1 soft white shavings at 7 cents and colored shavings at 4.50 cents and more. Old No. 1 kraft paper is readily fetching 5.25 cents per pound in current sales, and No. 1 overissue news 2.40 to 2.50 cents. Another very strong grade is white blank news cuttings, which are freely commanding 5.25 cents a pound. Folded newspapers are quotable at 2.05 to 2.10 cents f.o.b. New York and No. 1 mixed paper at 1.95 to 2 cents. Books and magazines continue to be priced at relatively

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**OLD ROPE AND BAGGING**—The markets for old rope and bagging are lacking in developments, current business being of narrower scope than for some time but evidently of ample volume to sustain values. No. 1 manila rope is selling at \$7.25 to 7.50 cents per pound to mills, while No. 1 scrap bagging is available at 3 cents or a shade higher.

#### EXTENSION OF BELGO PLANT.

The Belgo Canadian Pulp and Paper Company publishes the following report of the plant extension which the company is carrying out this summer. It may be mentioned that the designs have all been made in their own designing office, in charge of Mr. Claxton.

The contract for the buildings has been let out to the Raymond Concrete Pile Company and the work on the foundations has already been started.

There will be 533 wooden piles and 106 Raymond Concrete piles supporting the foundations. There will be 2,470 cu. yards of concrete foundations, 131 tons of structural steel and 544,000 bricks.

The buildings will consist of grinder room extension with a span of 59.5 feet and 108 feet in length with possibility of further extension.

Boiler room extension with a span of 64 feet and a length of 81 feet; transmission building with a span of 26 feet and a length of 71 feet.

The transmission building will be located at the further end of the new boiler house.

The new groundwood mill will provide room for three grinders units, of which two will at present be installed. The new plant will be entirely electrically driven.

The power will be supplied by the Shawinigan Water and Power Company. The current supplied will be 6,000 volt 3 phase 60 cycles.

The electrical equipment will consist of 3 2,000 K V. A 60,000 2,000 volt Westinghouse transformers, 2 2,600 H.P. 225 R.P.M. 2,200 volts 3 phase synchronous motors and 1 motor generator set, 875 R.P.M., 2,200 volt, 3 phase and 125 K W 125 volt D.C. respectively.

The grinders will be of the magazine type, two to a unit, each grinder with an approximate capacity of 20 tons.

The logs for the grinders will be of 4 feet lengths, instead of 2 feet for the present grinders and will be carried from the barker room to the grinders by means of a conveyor across No. 1 building.

For screening of the ground wood slush the Quiller screens now in use will be employed. They will however be remodeled so as to give them a double capacity.

The thickened stuff will be pumped to the new shipping shed basement, where it will be lapped and pressed ready for shipment.

The new boiler house will have place for 5 additional boilers. The basement is designed to suit the installation of modern underfeed stokers and ash handling equipment.

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*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

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GARDENVALE, P. Que., July 22, 1920.

No. 30

## TABLE OF CONTENTS

### Editorial:—

Undermining prosperity . . . . .	767
Is the A. F. of L. international? . . . . .	767
The Fishermen's creed . . . . .	768

### Special Articles:—

The banquet of the Technical Section . . . . .	769
Business meeting of the Technical Section. (Reports of committees—Education, Abstracts and Publications, Testing Moisture in Pulp, Mechanical Standards, the Text Books). . . . .	777
Financing industrials easier . . . . .	783
Technical Section (Review of literature) . . . . .	786

### News of the Industry:—

Spain gets Canadian pulps . . . . .	773
New mill contemplated in B. C. . . . .	774
International Paper Company founded by a Canadian . . . . .	775
Making Waterville machinery in Canada . . . . .	775
Pulp mill fumes hinder navigation . . . . .	776
Scandinavian newsprint for Rio . . . . .	776
Bugs blamed for paper shortage . . . . .	776
British trade news . . . . .	781
Pulp company changes name . . . . .	782
Moore heads Syracuse forestry School. . . . .	784
Manufacturing of papyrus pulp in Africa . . . . .	784
Paper crisis in Holland . . . . .	784
Why newsprint prices may go higher . . . . .	784
Belgo Paper Company, Limited . . . . .	785
Tuck goes to Dayton . . . . .	785

Big postal loss on newspapers . . . . .	785
U. S. paper stocks on hand . . . . .	786
Prices of waste paper in U. S. . . . .	788
Sewall opens Washington office . . . . .	788
Pulp and paper news . . . . .	789
Provincial Paper Co. buys up Port Arthur . . . . .	790
Manufacturing cotton hull pulp . . . . .	790
Pulp wood at \$12 a cord . . . . .	790
Sodium sulphate in Saskatchewan . . . . .	790
Higher stumpage rate in N.B. . . . .	790
Fleishackers not buying Whalen's . . . . .	790
Kellogg went west . . . . .	794
Will also make hydraulic machinery . . . . .	794
Paper goes fast by canal . . . . .	794
Pulpwood menaces navigation . . . . .	794
Roumanian paper requirements . . . . .	796

### Miscellaneous Information:—

Technical Section screenings . . . . .	774
International Number of the Pulp and Paper Magazine . . . . .	774
How to treat new belts . . . . .	775
Accident severity 439 times greater . . . . .	776
Three Chinese papers in New York . . . . .	780
Experiment with peat for pulp . . . . .	782
Gas masks in pulp and paper mills . . . . .	783
Combined bag and envelope . . . . .	784
Domestic china clay in U. S. A. . . . .	785

### The Markets:—

Canadian trade conditions . . . . .	791
New York markets . . . . .	792

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## EDITORIAL

-:-

*UNDERMINING PROSPERITY.*

After Canadian industry had recovered from the first shock occasioned by the outbreak of the war, it was realized that there must be an enormous amount of production in manufacturing as well as food producing industries in order to maintain the allied armies at the front. With this realization came a readjustment of industry in the Dominion which, with the huge demand on our resources and energies, resulted in unprecedented prosperity for workers in every line. Naturally, a number of industries which had catered to trade in temporary needs or luxuries required readjusting, but the fundamental industries continued at a rate which had not previously been dreamed of. With the enlistment of large numbers of Canada's strongest and keenest young men for the various military services there came a huge demand for labor, with largely increased wages as well as increased costs of living and materials. From the way in which the excess wages were spent we can see that the increase in this item was greater in most cases than increases in expenses. Large sums were subscribed to the various Victory Loan issues. This was no doubt largely due to the patriotic appeal, but must have been in part due to the lack of opportunity for spending on luxuries. This appears to be evident from the present large expenditure for non-essentials and even the conversion of savings as represented by Victory Loans for this purpose.

Further evidence of the tendency to spend rather than to save is furnished by the recent report of the Department of Trade & Commerce on the exports and imports of Canada for the first quarter of this fiscal year, ending June 30. As compared with the same period last year, exports have decreased by many millions, while imports have increased in even greater proportion and have now surpassed the amount of our exports. The danger in this line is twofold. In the first place it shows that Canada's income as indicated by foreign trade is less than the expenditure. In the second place every dollar in excess of export values which is spent abroad means to that extent a mortgage on the future prosperity of the Canadian people. In plain language, *Canadians cannot afford to be spend-thrifts.*

This is a land of natural resources unsurpassed by those of any other country. They furnish materials which are in great demand the world over. The efforts of our people should be to convert these resources

as far as possible into finished products, both in order to furnish maximum employment to Canadian labor and also to bring the maximum return in our dealings with other countries. The trade returns show that at present we are not paying our own way. There is no excuse for this, but the reason is extravagance, because a safe recovery from the operations of the war demands that all our efforts be directed to the payment of our debt, and the reestablishment of industry along peace lines. If we continue to buy luxuries abroad on credit there will come a time when it will be difficult to buy necessities. The rate of exchange with our principal market place is already heavily against us, and the manner and rate of spending at the present time are making matters seriously worse. Business has had fair weather for a long time, but there is likely soon to come a rainy day, and it looks as if a lot of Canadians would get wet. The thing to do is for all of us to join in harmoniously blending all our efforts toward the increased production of the commodities which the world's markets are in need of and to spend as little as possible for non-essentials, particularly such as must be imported.

*IS THE A. F. OF L. INTERNATIONAL?*

There have been some evidences that Canadians were not highly pleased with the action of the convention in Montreal of the American Federation of Labor in passing the resolution in favor of an independent Ireland. The action was strongly criticized by labor union men in Brantford, and "Investment Items," which is issued by the Royal Securities Corporation of Montreal, not only takes exception to this action of the convention but protests strongly the assumption that the A. F. of L. is an international organization. This paper makes the contention that the organization is overwhelmingly American, and that the principal function of Canadian members is to pay dues.

The first objection to the action of the convention is certainly well taken. The second point has much to support it as far as internationalism is concerned. It must not be forgotten, however, that some trade unions, in so far as they represent a certain craft,

are often really international. Among them are the Brotherhood of Paper Mill and Sulphite Workers, and the International Brotherhood of Papermakers. These organizations have done much to stabilize labor and improve working conditions in this industry. Besides these functions of a labor organization, which should be effective through co-operation with manufacturers, there is a feature which seems to us to be a possibility rather than a complete realization. This is the binding together of the members in good fellowship and by extending the knowledge of the industry, to instill the pride which will prove an incentive to further progress.

#### THE FISHERMEN'S CREED.

The Canadian Fisheries Association has made a declaration of principle and belief which might well serve as an example. We believe the members of the Canadian Pulp and Paper Association could honestly subscribe to a similar noble creed. Let's have one.

The Fishermen's creed runs:—  
OUR CREED.

We are proud of our industry. Its beginnings are lost in the mists of antiquity. We are an ancient profession. When Jesus Christ desired to humble Galilean fishermen to act as fishers of men, he called them men's souls.

In the forecastles of mediaeval fishing craft boys dreamed dreams which, as men, they realized and built navies and discovered empires.

This beloved Canada of ours was first colonized by fishermen—men of endurance and faith, pioneers of courage and thoughtful minds.

We therefore feel we are members of an ancient and honorable profession. We believe we possess the greatest fishery resources in the world today. We believe we have the faith and ability to develop them. We believe we can become the greatest fish producers on earth.

Let us co-operate and work towards that ideal—feeling each one in his own heart that we are nation builders, that we can take pride in our work and produce nothing but the best, so that others may say:

“IF IT IS CANADIAN, IT IS ALL RIGHT”

#### COBWEBS.

As a safety suggestion we suggest printing on each pay envelope: “If you want a full envelope each week, Be Careful.”

It is reported that requests to furnish Canadian exhibits for Chicago's zoo will be taken care of by the Department of the Interior. This is almost an invitation to make an observation which might not be appreciated.

Every little shower brings joy to the heart of the ground wood manufacturer these days. With paper mills hungry for pulp, the grinderman must use every available minute.

The Spruce Falls Pulp & Paper Co. is not dead after all. A report from Cochrane says that work will proceed at an early date. We hope so.

We are glad the exhibit illustrating pulp and paper manufacture at the Canadian Industries Exposition in England is attracting attention. Mr. W. H. Stokes, of the Forest Products Laboratory, has put a lot of work on the pulp and paper cabinet.

Madison, Wis., is the scene of an interesting celebration this week. The Forest Products Laboratory is ten years old. May it grow stronger as it grows older and continue its good work in showing how to use the forest to the best advantage.

The argument that Canadian goods, unless raw materials are bought in U.S. funds, should be quoted in Canadian dollars is supported by evidence from the trade commissioner to Japan in an article printed last week and also in an open letter to Canadian manufacturers from Trade Commissioner D. H. Ross, Melbourne, Australia. The latter plea is particularly pertinent as it involves an inter-empire policy of trade.

It is interesting to note that an offer has been made to buy the pulpwood that is being burned by settlers in Saskatchewan. The offer of \$12 a cord, delivered, will just about leave a day's wage for cutting and hauling. Perhaps the wood, which would otherwise be burned, should be considered worthless, but it really is a settler's possession. \$12 today is cheap wood, even for poplar and jack-pine.

Many people in Canada and the United States are suffering (?) from acute vacationitis. This is a malady that is best relieved by a few days or weeks in the open air tramping, fishing, or boating. This means camps in the woods with all the joys that come with living in the open. Benefits to the camper are not without some responsibility, for a large proportion of the fires which have damaged and continue to destroy the forest wealth of this continent are the result of carelessness on the part of those who are enjoying life in the woods. A little common sense and reasonable care will protect the forest better by preventing fires than the most elaborate machinery could do in locating and extinguishing them.

News of the success of Sir Thomas Lipton in winning the second cup race should give the Shamrock a much higher standing. Too bad all Ireland doesn't sail so smoothly.

# The Banquet of the Technical Section

The banquet which the hosts of the Technical Section have fallen in the happy habit of providing at the summer meetings is always a delightful affair. The Spanish River Pulp and Paper Mills, Ltd. entertained the Section at the Soo, and Col. Jones, General Manager of the company was toast-master—and such a genial host!

**Col. C. H. L. Jones.**

I note by the newspaper that I am supposed to make a formal address. I want to say that I have done everything exactly as I have been told to do so far during this convention and have attempted to entertain the guests during the day and during the night, and have done everything that I have been able to do, but I want to say to you definitely that I absolutely refuse to make a formal address.

Now, before making an address of any kind whatever, I will ask you to fill your glasses, or take them as they are and drink to the health of His Majesty, the King.

I will now read to you a formal telegram, which has just been received from Mr. P. B. Wilson, who could not be with us because of more important matters demanding his attention elsewhere, who is attending a meeting of the Board of Directors, and those of you have had anything to do with this can sympathize with him. I will read you his telegram and you will see how badly he feels. "Please express to the gathering how much I regret not being able to be with them today but am looking forward to meeting them all on Thursday morning at Espanola. I hope you will have a very successful and splendid time."

Now, gentlemen, I really do not know what is expected of the Chairman of a gathering of this kind at a technical meeting because this is the first Technical Section Convention that I have been at. It is the first dinner of the Technical Section at which I have acted as Toastmaster, so that you can imagine I am overcome with feeling of emotion and regret at my inexperience, etc. I don't know why Mr. Shipman, who is Chairman of the Executive, should have told the Soo Star that I should make a formal address. The question that comes to my mind is, "Do all Toast Masters at dinners given to the Technical Section have to make formal addresses? Do Technical Section men delight in hearing formal addresses? I can make a formal address if you desire, but am certainly not going to do it tonight."

Spanish River is delighted to have the Technical Section with them tonight. You are not exactly on our territory when you sit in the Country Club, because while Spanish River owns an immense territory, still they do not own the Country Club. They are delighted to have you inside of Algoma and they look upon it as an epoch in the history of Spanish River to have you here. They believe that the progress and development of the paper industry or of the cellulose industry, let us call it, really depends upon what the technical man is going to make of it. We have begun to develop cellulose but we have merely scratched it. Now, gentlemen, we must rise on our oars. We must be always on the alert if we are to forge ahead. I believe that if there is really any forging ahead to be done in Canada, it is going to be done by the Association represented here tonight.

Sault Ste. Marie is proud to have you here; some of us have been here for a good many years. They accuse me of having helped to take the place from the Indians. I do not know, perhaps I did. I knew a good many Indians when I came here twenty one years ago, and I believe there are still Indians here as far as I can see, and I cannot say that I blame them for it.

I believe that the city which you have chosen for your convention this year is a good old place. It has a good history. Here the Ojibway and the Chippewa, years before, banqueted together, just as we are doing tonight. It is quite true they did not have table cloths or cutlery, but I am sure they had a good time just the same. Personally, I have grown to like this particular city. I believe that it presents itself in good form to the stranger who comes here for the first time. For myself, I am inclined to think like the man who lived in New York, who was asked if he liked New York better than any other place. "Why," he said, "what other places are there?" I feel just that way about Sault Ste. Marie, and I hope that you, gentlemen, may have a particularly good feeling for Sault Ste. Marie also.

I am not trying to sell the stock of the Spanish River Company, it is easy to sell, but I do not know of any place that holds a more strategic position from a point of view of a pulp and paper company. If you will look at the map you will find that Sault Ste. Marie is situated directly north of the central population of the great United States. When we sell a very great percentage of paper and our pulp in the United States, why should we not like the situation of Sault Ste. Marie, and why should not I, as manager, be strong for it?

Gentlemen, we are glad to have you here with us, we believe in the Technical Section of the Pulp and Paper Association, we believe that in the minds of you men, if you will apply yourselves to the great problem of cellulose in connection with the pulp and paper industry you have great things within your scope, we believe that the possibilities of the pulp and paper industry have been but scratched, we believe that much as we would like to assure ourselves otherwise, the pulp and paper industry on the North American continent is just in its infancy. All you have to do is to look at the picture which was shown last night illustrating the groundwood section of our business. If you will look at the picture, and look at it closely, you must have been struck with one thought in connection with groundwood. That is, that we are showing you something that existed forty years ago. Groundwood is the basis of a very great part of our business, yet we are showing you something in this picture in the method of producing groundwood that existed thirty or forty years ago. This illustrates but one of the problems to which the Canadian Pulp and Paper Association should divert its attention. There are great opportunities for the development of the business in the particular sphere that is controlled by the Technical Section. I want, on the part of the Spanish River Company, to express our serious appreciation. From the President down to the Directorate through the Managerial section of our business we appreciate very much the work which the Association is doing. I want to assure the Association and the new members here tonight that the Spanish River stands behind

whatever efforts are put forth by the Technical Association. I want to say in a most serious way that the Spanish River looks to the Technical Association for great developments in this business. If you apply your efforts in the right direction you can accomplish these things by co-operation and through the proper direction of concentrated effort.

Now I speak from a point of view of Management and I feel sure that I speak from the point of view, also, of the practical man in the mill. He is the craftsman who delights in the production of his own craft. You have got to show him that the technical features of the business will be a complement to these things that he has developed to a certain point. If you can do this, you have a practical man with you, but this is a difficult task. We know that the practical man looks askance at the man who comes in from college. It requires great tact on the part of this man and above all great care should be taken that you do not assume the duties of showing the practical man how to run his business. You set him on edge when you do that, but convince him in the first place that you are putting long years of research work to his long years of training in the business and can carry it out, and you will have accomplished a great thing. This is, I believe, one of the large problems of the technical man. If the technical man develops something in the "Lab," he has got to make the practical man believe in it and make the practical man develop it in the mill. Personally I have the greatest faith in the ability of the technical men of the industry to accomplish these things, and I have the greatest faith in the practical man, showing that the combination of the two should carry the industry forward and onward in its sphere. We are today confronting many problems. We are confronting the high cost of living. The high cost of living exists. The high cost of producing exists. How are we going to confront it? We must combat it as I see it, in two ways. You have to do it through greater production and greater economies. Economies that were never contemplated in the past must be secured. How are we going to overcome the high cost of production? Take, for instance, today we pay \$7.25 a cwt. the mine for coal, practically double what we paid last year. If you enquire into this the mine owner will tell you that he is paying practically double for having the coal produced. We, on our part, who sell paper to our customers have to sell on the basis of cost of producing. It is a never ending wheel. The answer to the whole problem is in greater production and greater economies and as I see it, the solution of the problem rests with the technical men, and rests in a large measure in research work, and gentlemen, as Manager, I tell you, with every respect for the practical and without attempting to land in any way the theorist, this industry depends as other industries do today, upon the technical man to find other methods and more economical measures and as I see it, it is the inercr duty of everyone to assist in every way possible to discover those things which will mean a help to this great problem.

I talk to you seriously, just as I feel the duty existent of the Technical Association and I would rather leave that message with you than anything else I can tell. I would rather leave that message of the appreciation of the duties that exist with respect to the Technical Association by the Management of these great companies who are exploiting the cellulose in-

dustry in this country. The Technical Section has a definite duty to perform and I think that duty is such as I have outlined to you.

The cellulose industry in this country has not been scratched. The great thing is the development of the cellulose industry. For instance I heard a man say tonight, he made a broad statement that sulphite pulp would some day only be a by-product of what would be produced from the waste liquor of the sulphite business. We are still making sulphite to sell so I cannot go as far along the road as that gentleman did. But I believe he was sincere and I believe he has given serious thought to this whole problem.

Now, gentlemen, I am more pleased than I can tell, at your appreciation of what Spanish River is trying to do. In the first place let me reiterate what I have said before, that, Spanish River knows far better than my humble words can tell, what is expected of the technical men of today; we expect great things from you, and if the humble program that we have laid out for your entertainment, has met with your approval we are well repaid. Of course we want you to have a good time—we expected that when we started. Everybody has a good time when they come to Sault Ste. Marie.

I don't know whether Chairman Shipman is a prophet or the son of a prophet, but I see that tho I did not intend to at first I have given you what might be termed a formal address. However, gentlemen, I am sincere in what I have said, namely, that the future progress of this industry rests with you.

I think that the Chairman of the Section should make a formal address. He seems to know all about them and so I call upon Mr. Shipman to give us a formal address on the part of the Technical Section.

#### Mr. Shipman.

Mr. Toastmaster and members of the technical section of the Canadian Association, the American Association and other guests. I may be the son of a prophet and may have been able to forecast what kind of a speech Col. Jones would make, but I do not believe that he is even the grand-son of a prophet; in fact I know he is not when it comes to prophesying my speech. My feelings have been somewhat mixed today, in fact everything that I have had to do with for the last two or three days has been somewhat mixed and I really hardly know how to talk as I am partially a host and partially guest as Chairman of the Technical Section, and so I have felt that I really should not make a formal reply to Colonel Jones so I am going to ask one of our most genial members to reply for the Technical Section and for myself; Mr. George Carruthers, whom I know you will all enjoy hearing. Mr. Carruthers.

#### Mr. Carruthers.

Mr. Toastmaker and friend, who passed the buck just as gracefully as I do myself when I am to report on the Educational committee; I have heard of the Spanish River Company—we have all heard of the Spanish River Company and we have all heard of the Sault and about its strategic position as an industrial centre.

I feel like the Scotchman who went to the races and put a shilling on one of the horses. He met with two of his friends and they finally induced him to put a shilling on a dark horse. After the race they came up to Sandy and gave him back his original shilling and two pounds ten besides. Sandy was very much

amazed and stared at them in astonishment, remarking, "How long has this been going on?" I think I am expressing the sentiment of the Technical Section when I use the same expression in connection with Spanish River—how long has this thing been going on? Our toastmaster said that he had no secrets.—I wonder what he calls this method of entertaining of his?

There is a shrewdness under all these arrangements—it comes out in various ways. Now when a friend asks \$140.00 for groundwood there is a reason for it. The Spanish River Co. does that. They get the buyers together and show them this film, illustrating what it costs to do the different operations—tell them that everything doesn't always run so smoothly as shown in the picture, loads upset, etc., and then we have to pay the shot.

Now, not long ago in New York we exchanged views. At one of the recent meetings in New York the statement was made which quite bears out the facts that have been given regarding the cellulose industry tonight. This man made the statement that the time would come when there would be just as many industries established on the sulphite liquor and by products as have already been established on the coal tar by-product. This is a very important statement to make on this and has impressed me very much.

Now, another gentleman, at one of our recent New York meetings—you see I have been in New York many times—made a remark about the wonderful industrial progress that we are witnessing. In the olden days if a man had any secret about his business he kept it to himself and he swore his sons to secrecy with the result that there was very little progress made in many industries. Once men started to exchange views once men started to do what this Company is trying to encourage us to do, industry went ahead with leaps and bounds. New machinery and new methods come into being with such rapidity that they appear to be invaluable to us, so much so that they become commonplace in almost twelve months. Not long ago I was writing out a list of things that have been invented since I was a boy. I was really amazed at the number of new inventions and new methods that have come into being in that short period.

Gentlemen, on behalf of the Technical Section, we will recall Mr. Jones' statement when he said that he had no secrets. I am sure they have allowed us to see everything that could be seen in the mills. They told us that we were welcome—will anyone say that we haven't been welcome? In other words, Col. Jones is a man of his word—we have no reason to doubt his word and I am going to ask you gentlemen, to fill your glasses and rise and drink to the health of the Spanish River Company and to the health of Col. Jones.

#### Col. Jones.

Here we have not only the strategic location that I spoke of before but immense natural resources at the back of us. This country has only been scratched for minerals, but I believe that its metallurgical value is very vast, and practically undetermined as yet.

The history of Sault Ste. Marie is a wonderful one: here the red man in days gone by, held his councils. These were no doubt a different kind to what we are holding here tonight, but nevertheless the Indians appreciated the fact that Sault Ste. Marie was a strategic point.

We are proud in Sault Ste. Marie of our history; of those things that you read in the Canadian history, which are dear to the heart alike of the men of mature age as well as the school child. Sault Ste. Marie was always an outstanding point. Twenty years ago, when I first came here, this place I don't think had more than 2,500 people, today it has almost 28,000. Happily, in Sault Ste. Marie, we have always been blessed with men in our civic affairs who realized all these things and have endeavored to the best of their ability, to serve it well and I think that those of us who are connected with any of our industries have always appreciated the efforts of those who take part in our civic government matters. Gentlemen, we have with us tonight Mr. Farquhar, the Mayor of Sault Ste. Marie. This city's government is second to none, I can assure you, throughout the length and breadth of the whole Province of Ontario. We are trying to develop, and develop to the greatest possible extent, all those things which the city should have. I can assure you that the City Council of Sault Ste. Marie, and the City Council as represented by the Mayor, is doing all these things, and I have very great pleasure in calling upon the Mayor of Sault Ste. Marie to say a few words.

#### Mr. Farquhar.

Mr. Toastmaster, officers and members of the Technical Section of the Canadian Pulp and Paper Association, and officers of the Spanish River Company. I can assure you that it gives me great pleasure to have this opportunity of being present with you tonight and I wish to thank Col. Jones and the officials of the Spanish River Pulp and Paper Mills for their kindness in extending to me this invitation. I am especially pleased to have the opportunity and the pleasure of meeting with the men of the Technical Section of this Association and on behalf of the members of the City Council and of the citizens of this city I take much pleasure now in extending to you a real hearty welcome on this your visit to our city. This may be the first time that some of you have visited Sault Ste. Marie. I have found that a great many of the visitors coming here know very little of the industries in our midst. They know very little of the Pulp and Paper Mills and of the Steel Industry, to say nothing of the great resources of this part of the district, our timber, our minerals and our power. I believe that the Spanish River Pulp and Paper Mills do not realize the extent of their resources and I believe that they will not realize their resources until the flying boat completes its work of surveying and cruising their properties.

I find this lack of knowledge of our great resources, true not only of those who visit us from across the border, but I also find it true of visitors from within our own Province and country.

With the unlimited and undetermined resources of this great North country and Sault Ste. Marie situated as it is, there is no question about it but it must become a great industrial centre, and I am sure tonight, as I have already stated, just let me repeat, that it gives me much pleasure indeed to extend to you visitors and members of the Technical Section of the Pulp and Paper Association, a real hearty welcome to our city. I thank you.

#### Col. Jones.

Gentlemen, as you know, in all cities and in all communities there are outstanding figures who dominate the things which count in their own particular spheres.

Those who dwell in this particular sphere always recognize these things. We have in Sault Ste. Marie certain citizens in whom we recognize these qualities. I do not know of any citizen who shows these qualities in a more marked way than the Senior Judge of Algoma. We have the Senior Judge of Algoma with us tonight in the person of Judge Stone. If there is a wedding or if there is any great event like the meeting of the Technical Section or anything like that I can assure that it would not be complete at all unless Judge Stone was there. In addition to all this, Judge Stone is a good fellow.

The Judge is a wise man and a good judge of things. Now, admitting all this which I have just said, and attempting nothing derogatory in any way to Judge Stone, I do not think he knows anything at all about the technicalities of paper or of pulp, or of cellulose or of any of those things at all. Nevertheless, all the rest of the things that I have said stand.

The Judge is a very wise gentleman, filled with the lore of this particular district, and Canada in general, and I have much pleasure indeed in asking the Judge to say a few words about Sault Ste. Marie, and about anything at all that he may have to present to you.

#### Judge Stone.

Mr. Chairman and Gentlemen:—

In the first instance I want to thank those in charge of this banquet for a very pleasant evening and for what promises to develop into a fairly entertaining night. I was on the boat this evening as you know, and Mr. Chairman, in the midst of my observations, I was struck with the number of long, conspicuous, inquisitive noses that are associated with the membership of this technical section, and I cannot help thinking that a predatory nose has always been taken as an indication that its possessor was a searcher for truth, and whether that truth be spiritual or scientific or merely mechanical, they are designed naturally to be effective enquirers.

I have been asked to welcome you, to say something in regard to the District in which we have gathered. In the first place I may say that this is only part of my District. It extends from away up midway the length of Lake Superior to down about half way to Sudbury, and from Sault Ste. Marie to the Albany River in the vicinity of the Hudson Bay; that is the land that lies between old Ontario and the new District called the District of Patricia. We have in this District four railways crossing it from East to West, and one crossing from North to South, 300 miles long.

As the Colonel has just said it is a marvellous district. It is a district which is self supporting and I am speaking not only on behalf of those citizens who are directly interested in such plants as the Spanish River and the Algoma Steel, but as representative of the citizens generally of the District, when I say that the existence and progress of the community are accompanied by the transformation of its own resource and varied natural resources into the finished product for the world's markets. It is by reason of the successful efforts of such organizations as that whose hospitality we are this night enjoying in taking the raw materials of the District, reducing them to marketable commodities within our own boundaries and bringing tribute from the ends of the earth right into this new District that the community subsists. It is, therefore, peculiarly appropriate that the people of such a District should have the opportunity of wel-

coming you men whose main job is, either by mechanical process or mechanical device to improve production methods, thereby increasing the output, and so contribute as Colonel Jones has said, in a most eminent and forceful way to the prosperity and success of this district.

Now, as Colonel Jones has said, this is a District with a wonderful history, he has made reference to the old lore of the District. Recently in my reading I happened to pick up a Parkman's volume on La-Salle and the Discovery of the Great West, I had read it before, but it impressed me more this last time with its descriptions of the early history of this District; how on the 14th of June, 1671, 250 years ago on the 14th of next June, St. Luzon, a Frenchman, arrived and took possession of this district and of the territory drained by the rivers that run into Lake Superior and Lake Huron and all territory discovered or undiscovered from the seas on the North and the West to the great gulf on the South; took possession of it in the name of Louis 14th of France. Does it not sound like ancient history? At the foot of the rapids stood the village of the Saulteurs. Near at hand stood the rude fort of the Jesuits.—Forth from this port St. Luzon, with all the panoply of uniform and colors, leads his little force of fifteen, followed by the faithful Jesuit priests and surrounded by bands of wondering redskins. He leads them to the hill hard by, and there they, with the blessing of the Jesuit Fathers, erect a large cross and sink a cedar post to which is attached a leaden plate engraved with the Royal Arms of France—and that occurred 250 years ago next June within a few rods of the place from which I am speaking tonight.

Today this has all gone from France and has come into the hands of a people destined by Providence to carry their raw potentialities to the doors of commerce for the sustenance of men and for the advancement of civilization. So today we stand on the property originally claimed on behalf of the Grand Monarchy of France. The only remnant of this French domain in the Dominion of Canada today we find in the two little islands in the St. Lawrence, St. Pierre and Miquelon.

So much for the lore that the Colonel is so fond of. You have come then gentlemen today to the young and growing city of Sault Ste. Marie. As we were sailing up the River today I could not help thinking with what wonderment and amazement these first adventurers threaded their way up this River, and the amazement with which they must have looked out over these great inland seas. Today we have conquered the natural obstacles in the way of transportation by the building of the great locks through which we passed this evening, which have followed in the wake of the first lock built by the fur trader and which you see represented along the side of the general offices of the Company. And so the world is progressing—progressing during these last few years more rapidly than it has ever done before, and it belongs to you gentlemen of the Technical Section of the Canadian Pulp and Paper Association to see that in so far as your branch is concerned, nothing that industry and application and ability can do to improve methods and increase production shall be left undone.

#### Col. Jones.

After that discourse can you wonder that when any prominent citizen passes away it is demanded that the Judge should be a pall bearer?

There are a number of great institutions throughout the length and breadth of this country and those of us who come in contact with them learn to appreciate them. I believe that there is no institution—I do not except Spanish Bread when I say this—throughout the length and breadth of this country that has a more wonderful record than the Canadian Pacific Railway.

We have with us to-night for the first time in any gathering of this kind, an official of the Canadian Pacific Railway in these parts. I rather imagine that he and I were associated together in days gone by because at one time I was a humble worker for the great Canadian Pacific Railway. I know it will come as a surprise to Mr. Wilson to be called upon for a few remarks tonight. He has been very good indeed to the delegates as they travelled through from Montreal and has shown them a great many kindnesses and done everything possible to make the journey comfortable and enjoyable. Gentlemen, I am going to ask Mr. Wilson to say a few words.

#### Mr. Wilson.

Mr. Toastmaker and Gentlemen:

This is surely a surprise. Unfortunately, I am not an after-dinner speaker. I have railroaded all my life—and that particular part of my education has been sadly neglected. However, on behalf of Mr. Tremblay, Mr. Bowen and myself, I wish to thank you for the privilege of attending this banquet, and I may say right here that Mr. Bowen looks after the social end of it. Unfortunately, he is indisposed and could not be present this evening. Now, as I told you before I am a very poor speaker, I have no statistics to give you but I will tell you a little story, killing time as it were. This story is about the salesman who was trying to sell an incubator to an old farmer, but although he had used practically every argument possible he could not convince the farmer to buy. As a last resort he approached the farmer and began explaining the great amount of time that would be saved by using an incubator, but the farmer only replied in disgust, "Oh, what's time to a clucking hen?"

Gentlemen, I am sorry that I have no statistics, that I could not better represent the Company that I have the honor of representing here tonight, but I hope the next time I may have the honor of attending a similar banquet I may be better able to tell you more concerning our organization.

I thank you very much for the kindness extended to us during our visit to the Sault, and as I am going back with the delegates as far as Espanola, anyway, I will endeavor to give them a good time for that distance. I thank you.

Col. Jones, introducing Mr. Keenan:

I am going to ask you now to drink to the health of the President of the United States and I am going to couple with this toast the name of Mr. Keenan. Mr. Keenan is a Scotchman to start with, having become an American, and being the representative here of the great United States, I feel him well qualified not only to respond to that toast, but in his usual clever manner to say something that is of interest not only to the meeting in general but to the Technical Association in particular.

I will ask you to charge your glasses and drink to the health of the President of the United States.

#### Mr. Keenan.

Col. Jones, Chairman Shipman, Members of the Technical Section of the Canadian Pulp and Paper Association:

I am very glad and very pleased to be able to present the greetings of the American Technical Association to the Technical Section of the Canadian Pulp and Paper Association. The meetings of these Associations are becoming more profitable year by year and we find that the two Associations are becoming more closely united and are accomplishing very fine work.

In my opinion there should be complete dissemination of the information secured covering the progress made in cellulose industry through our joint Association. There should also be committees on standards, processes and testing. In this way we should be able to collect from all parts of the country where paper making is carried on, the best results of effort, and endeavor to place these before the members of the industry in this country.

It is very encouraging to feel that our efforts have the hearty support of the executives of the many Companies, of Col. Jones and Mr. Mead. Whenever I have gone in Canada I have always been treated with such courtesy and kindness that it is among the most pleasant memories of my life and we hope, on the American side, that the Canadian section will send a large representation to our meeting in Saratoga Springs, September 1st, 2nd and 3rd. We have the entire Grand Union Hotel in Saratoga Springs at our disposal and we can assure you and your wives and sweethearts a very hearty welcome if you will come.

Gentlemen, I thank you again, on behalf of the American Technical Association for the many kindnesses and courtesies extended to us all by the Canadian Section.

#### SPAIN GETS CANADIAN PULP.

Winnipeg, July 16. Initial steps toward establishing trade between Canada and Spain are being taken by Augusta Ramoneda, of Barcelona, Spain, who as the representative of all the paper mills of Spain, is a visitor here today, en route to British Columbia. Mr. Ramoneda stated that the primary object of his trip to Canada was to investigate the lumber and pulp supply of the country and to ascertain how much of the product was available for export. The paper mills of Spain need 60,000 tons of pulp, he said, and the first two shipments from Canada amounting to 7,000 tons left Quebec the latter part of last month. Development of trade in other products would follow later, Mr. Ramoneda declared. An office has been established in Montreal.

The Nashwaak Pulp and Paper Co. is urging the city of St. John to install a 36" concrete pipe from Spruce Lake. The company wants assurance of 1,000,000 gallons per day.

No decision has yet been given by the Ontario Government on the application of J. J. Carrick for a fiat against the Hydro-electric Power Commission of Ontario. Mr. Carrick wants to bring action to compel the commission to fulfill the conditions of the alleged bargain he claims was made regarding the purchase of the Campbellford Pulp Mill and the Brnton Limits in central Ontario. He alleges the commission did not live up to the conditions.

**TECHNICAL SECTION SCREENINGS.**

Courtesy of Spanish River News,

Hats off to A. L. Dawe! He can give cards and spades to the railroad officials when it comes to sleeping 40 men in a 30-man car.

They say a good mill chemist is one who can adapt simple apparatus to many uses, who can get along with a tin can and a blow torch. The more I travel with Alf, the more I realize he should have been a mill chemist. Say, Alf, did you ever try tooth paste as a shoe polish?

Can you beat it for the noise and confusion stirred up by one "Snowshoe" from Shawinigan?

As usual, Geo. Carruthers was there with bells on. We would suggest that Geo. scatter just a few choice ones here and there throughout the text books so as to sustain the interest of the students.

Let's we forget; can anyone imagine better hospitality than was accorded us by Messrs. Wilson, Bowen, and Tremblay of the C.P.R.

Also many thanks are due to both the Algoma Eastern Railway and the C.P.R. for the fine manner in which they co-operated. The C.P.R. sent Supt. Wilson's private car to aid in making our guests' trip as comfortable as possible and also very kindly held the evening freight, to which the Technical cars were to be attached, until after the close of the banquet at the Country Club. The change over from C.P.R. to Algoma Eastern at Espanola was done so quickly and easily that hardly any of the party knew they were on another line.

Many expressions of appreciation were made by our guests of the kindness and hospitality shown us both by the Algoma Steel Co. and the International Nickel Co., and the chairman wishes to express particularly to Mr. Collins of the Nickel Co., his appreciation of the most excellent lunch which was served us at the Copper Cliff club.

The Chairman wishes to announce that he didn't do any of the work of preparation. But he had a grand little committee, as follows:

Railroad Transportation, Frank O'Brien,  
Automobile Transportation, Herb McCoy,  
Soo Rapids & Locks Boat Committee, A. H. Chitty,  
Country Club Banquet, C. C. Irvine,  
Hotel Meals, Ben Avery,  
Mill Lunch Room, Geo. Kohl and Alf. Gandette,  
Moving Picture & Auditorium, Bert Waters,  
Soo Mill Guides' Committee, Chas. Mackey, Bob Cooper, Guy Dargun  
Special Folder Committee, Rod Olzendam,  
Badges, Scotty Conlson, Miss Delaney, Miss Collins  
Pictures, Scotty Conlson by himself  
Espanola Breakfast, Hugh McNeeny  
Espanola Guides, Doug Parker  
Copper Cliff Lunch, Mr. Collins  
Copper Cliff Guides, Mr. Kent

We knew the Chairman couldn't have done *all* of it. Glad to thank the committees individually by name. Ed

**INTERNATIONAL NUMBER OF PULP AND PAPER MAGAZINE.**

The Pulp and Paper Magazine has felt for some time that it would be desirable to present in one issue, a comprehensive survey of the pulp and paper industry in Canada, so that paper buyers in all lands might know the extent and variety of our manufactures, the resources behind the industry, and the excellence of our mills and management. The matter has been contemplated for several years, but the time has not been opportune until now. With improvement in transportation facilities and increased production coming along, it will soon be possible for Canadian mills to give better service to foreign customers. Hence our first special number.

The contents include: The Pulp and Paper Industry in Canada (foreword), brief histories of the Canadian Pulp and Paper Association, Canadian Paper Box Makers Association and Canadian Paper Trade Association; articles on How to Get the Goods to the Customer, Canada's Exports of Pulp and Paper, How sulphite pulp is manufactured (semi-technical), Imports of Pulp and Paper Into Canada, The Pulp and Paper Mills in Canada (with map), Future Newsprint Production in Canada, Paper Products made in Canada, Pulp and Paper Personalities (biographical), Canada's Pulpwood Resources, Canada's Water Powers, Pulp and Paper Exports and Imports of the U. S. A., and descriptions of a number of representative pulp and paper mills and their products, including: Abitibi Power and Paper Co., Belgo-Canadian Pulp and Paper Co., Whalen Pulp and Paper Mills, Brompton Pulp and Paper Co., Canada Boxboard Co., Canada Paper Co., Canadian Vegetable Parchment Co., Donnacona Paper Co., Don Valley Paper Co., Dryden Pulp and Paper Co., E. B. Eddy Co., J. Ford and Company, Garden City Paper Mills, Hinde and Danch Paper Co. of Canada, Interlake Tissue Mills, Kinleith Paper Mills, Laurentide Co., MacLeod Pulp and Paper Co., Nashwaak Pulp and Paper Co., Northumberland Paper and Electric Co., Powell River, B.C. (town), Price Bros. and Co., Provincial Paper Mills, Riordon Pulp and Paper Co., Rolland Paper Co., Howard Smith Paper Mills, Spanish River Pulp and Paper Mills, St. Maurice Paper Co., and Wayagamaek Pulp and Paper Co. There are also a goodly number of attractive and instructive advertisements, and 221 illustrations.

The editor was greatly assisted by Mr. Edward Beck, who is in charge of the publicity work of the Canadian Pulp and Paper Association, and wishes to thank him and the paper mills and advertisers for their hearty co-operation. The paper is heavy coated stock, of Canadian make of course, with a kraft paper cover. There are 260 pages, including ten special inserts, some in three colors. Through the efforts of the advertisers and by sending out a large number of complimentary copies, the publishers are "planting" this number where it will bring the most good to the industry. Scarcity of paper—in spite of a great effort on the part of the manufacturer to help us out—made it necessary to limit the edition. There will, however, be a few copies available, for which we must charge \$1.00 each, post paid.

**NEW MILL CONTEMPLATED.**

The Masset Timber Company, Ltd., is making investigations at Graham Island, Canada, with a view to establishing a paper mill there on the property of the company in the near future.



### HOW TO TREAT NEW BELTS.

Mechanical tests show that the ordinary new belt will not carry the same load as it will after a few weeks' service, by from 10 to 20 per cent. It follows that on new belting a good light coat of dressing should be applied in the manner suggested below—before installing. Repetition at frequent intervals for the first few weeks would help, too.

Remember that dressing is not put on the belt so that it may stick the belt to the pulley and thus make it pull more. It is put on so that by entering the leather fibres it may toughen them, lubricate them and thus give longer life to the belt. Whenever the leather seems dry, harsh, flimsy, does not have the right mellow feel—you may be sure dressing should be used.

Another important factor in belt economy is cleanliness, first of belt and then of pulley. A clean, soft hand will not slip easily even on smooth glass or polished wood. Leather was once skin, and smooth, clean leather will not slip easily on a smooth, bright pulley surface.

Belt surface should be clean, smooth, level and comparatively dry. Tests have shown that the coefficient of friction (on iron and steel pulleys) is:

- .56 when dry
- .36 when wet
- .23 when greasy
- .15 when oily.

Therefore it is very important that both belt and pulley be kept as dry and clean as possible.

Too much grease is injurious to leather. Mineral oils in particular rot leather rather rapidly, and where belting is liable to become soaked with oil, mechanical means should be taken to keep the oil from the belt.

Where mechanical protection is impossible, the belt should be removed from time to time and the oil extracted with some solvent such as naphtha or carbon tetrachloride. Packing the belt in dry sawdust or shavings will sometimes answer the purpose. If it is impossible to remove the belt, wiping on the pulleys with a dry cloth or waste will help. Machine oil, in addition to its tendency to rot leather, when present in excess, gives a very poor frictional surface, as shown in the table preceding.

Too much oil will penetrate the belt and affect the adhesive quality of the ordinary cement used in gluing belts together. Frequently, from this or other causes laps start up at the points, a result sometimes due to running belting in the wrong direction. Single belts should be put on so as to run with the grain or hair side next to the pulleys and so that the points of the laps will run against the pulleys, as the laps on the outside of a belt are the most liable to come apart when the points are run against the atmospheric pressure.

Double belts should be put on so that the points of the laps will run with the pulleys, as both sides point in the same direction.

Remember that because shafting was in line once it does not necessarily remain so indefinitely, and regular attention to this point will result in a large saving of time, trouble and power. Light machines, especially when not firmly fixed on the floor, are apt to out of line a little. This will cause a lot of trouble unless quickly remedied. This misalignment is difficult to detect and always results in uneven belt strain, excessive slip and reduced delivered power.

### Periodical Overhauling Advisable.

To make certain that you are getting the most out of your belts and to safeguard yourself against the possibility of a sudden shut-down in some department on account of belts going wrong, have all belting overhauled periodically. Have greasy belts cleaned up. Have the ples looked over and the laps that have picked up carefully cemented down again. Have worn out belts cut down to a narrower width and use them over again.

In this article we have briefly indicated several ways to keep belting equipment in trim. To summarize: Place a responsible man in complete charge of all transmission equipment; standardize belting as to type, brand, width and weight for every drive; demand regular inspection and reports as to condition of belts; run belting at a uniform tension and as slack as possible; eliminate injurious dressings and use a little good dressing; keep pulleys and belts clean and smooth; make sure that shafts and pulleys and belts are in constant alignment; overhaul belting periodically. If these suggestions are faithfully adhered to it will mean less power used, less work for mechanics and millwrights, uninterrupted operation of machines, increased output, lower cost of power transmission, and more profits for the firm.—The Amphibian.

### INTERNATIONAL PAPER CO. FOUNDED BY CANADIAN.

The International Paper Company, which has appeared so prominently in the campaign against Canada at Washington, was founded by a Canadian. It was a consolidation, in 1898, of some 30 newsprint mills.

The late Hugh J. Chisholm who was born at Niagara-on-the-Lake. He went to a business college in Toronto and, beginning as a newsboy on the train, his work carried him to Maine where he became interested in a newspaper and thence in lumbering and paper-making. Probably no man did more to build up these resources in that state than Mr. Chisholm, where he was not only highly regarded during his lifetime but has left a clean reputation behind him. The greatest monument to him is the model town he developed for his employees at Rumford, Me.

Process Engineers, Ltd., are issuing interesting advertising booklets. The last one announces that 36 per cent. of the daily tonnage of sized paper from all the mills of Canada is made in the 55 mills equipped with the DeCew sizing system.

### MAKING WATERVILLE MACHINERY IN CANADA.

Canadian Mead-Morrison Limited have procured the rights to manufacture the wood preparing machinery designed and patented by the Waterville Iron Works of Waterville, Maine. This line includes all the important equipment of the wood room, such as barkers, which are equipped with the Lombard attachment; a slab barking machine, log splitters, sawing machinery, chippers, chip crushers, re-chippers and chip screens; as well as several varieties of trucks. The product of the Mead-Morrison Company will be entirely Canadian and prompt delivery will be possible.

The "Papermaker's Pocketbook," compiled by James Beveridge, who is well known to papermakers in at least four countries is temporarily out of print.

### ACCIDENT SEVERITY IN ONE PAPER MILL 439 TIMES GREATER THAN IN ANOTHER.

A range from 23.4 to 119.5 in accident frequency rates and from .065 to 28.5 in the accident severity rates is shown in a compilation of the accident records of seventeen paper and pulp mill members of the National Safety Council, just made at the headquarters of the Council. In other words, while one paper and pulp plant has only 23.4 lost time accidents per million hours of work another plant in the same industry has 119.5 accidents for every million hours of work; and while one plant loses exactly 39 minutes based on a theoretical ten hour working day out of each thousand hours of work, another plant in the same industry loses 286 hours out of every 1,000 hours

a loss 440 times as great as the plant having the lowest severity rate mentioned in this tabulation. In reply to a request of Robert M. Altman, Chairman of the Paper and Pulp Section of the National Safety Council, seventeen mills employing 8,368 workers sent statistics from which the following table was compiled:

Accident Records Paper and Pulp Mill Members —  
January to April, 1920, inclusive.

Plant	Average Number of Employees	Total hours worked	Number of accidents	Total time lost days	Frequency rate	Severity rate	Deaths	Permanent Injuries
1	114	92,503	3	6	32	.065	0	0
2	90	90,760	4	19	41	.21	0	0
3	589	130,000	11	36	85	.27	0	0
4	325	338,000	14	97	113	.29	0	0
5	260	214,389	5	71	23.4	.33	0	0
6	252	210,132	6	75	28.6	.357	0	0
7	675	567,000	31	252	54.5	.445	0	0
8	1,226	1,020,120	37	543	36	.53	0	*1
9	312	257,800	14	158	54	.61	0	0
10	1,218	953,000	114	880	119.2	.92	0	0
11	224	201,770	15	215	73.2	1.10	0	0
12	330	271,972	16	382	59	1.41	0	*1
13	427	374,935	23	573	61.5	1.53	0	*1
14	288	290,678	13	486	45	1.67	0	*1
15	1,183	1,292,088	33	12,335	25.5	9.52	2	0
16	570	370,084	35	6,371	95.5	17.25	1	0
17	258	235,333	26	6,696	111	28.5	1	*1
Total		6,913,561	100	29,295	57.8	1.23	4	5

Note: The frequency and severity rates are calculated according to the method adopted by the United States Bureau of Labor Statistics and by the International Association of Industrial Accident Boards and Commissions, and recommended by the National Safety Council. Deaths and permanent injuries are weighted according to the standard scale adopted by the above organizations.

One month only.

Three months only.

\* Inger.

Each company has been given a key number and will be advised of this number so that it will know how its record compares with that of other paper and pulp mills.

The records are arranged in order of their severity rates, as the severity of accidents has a more important influence on plant production and accident costs than does the frequency.

The average of these seventeen plants, operating a total of 6,913,354 hours, shows a frequency rate of .678 and a severity rate of 4.23. This high severity rate is caused principally by the four fatal and five permanent injuries. Omitting these nine serious accidents the severity rate would be only 0.55. It will be noted that seven of the above companies have a severity rate of less than .05, that ten have a rate of less than 1.0, and that the only plants having a severity rate of more than 1.0 are those having a death or permanent injury.

This table seems clearly to indicate that paper and pulp mills members should not be satisfied unless they can keep their frequency rate below .50 and their severity rate below 0.5.

The Council will be glad to print quarterly in the NATIONAL SAFETY NEWS the accident records of the paper and pulp mill members who will send in these records as requested by the chairman.—R.H.G. in "National Safety News."

### BUGS BLAMED FOR PAPER SHORTAGE.

One of the reasons why the price of news print is soaring is that there are eighty-four different kinds of bugs, fungus and bacteria which are destroying the wood before it can be made into paper. The activities of these bugs and germs and a study of how the wood can be destroyed and deteriorated by them are now to be made the subject of study by the United States Forest Products laboratory in Wisconsin.

Isolated in a separate building, called by the officials of the Forest Products laboratory the bug house, this investigation is being conducted. It is claimed that millions of dollars can be saved the paper manufacturers if a means can be discovered to check the deterioration of wood used in making paper by those wood destroying agencies.

The bug house contains a room about twelve by twelve feet, heated to a summer temperature and moistened by a misty spray.

Under present conditions it is practically impossible to make paper from other products than wood. Paper manufactured from corn stalks and other substances has been found more expensive than the wood product.

### SCANDINAVIAN NEWS PRINT FOR RIO DE JANEIRO.

What is said to be the first Finnish steamer to enter Rio de Janeiro port has arrived, the Garryvale, of the Finland Transoceanic Co. Of more interest to news paper owners, however, was the cargo—1,000 tons of print paper from Scandinavia for local delivery. The shortage and consequent high price of print paper is the most important question confronting Brazilian newspapers.

### PULP MILL FUMES HINDER NAVIGATION.

An enquiry into the cause for the grounding of a steamer at Three Rivers indicates that fumes from the pulp mills there are the source of the trouble. It was intimated at the hearing that a few thousand dollars would avert the nuisance. It is likely to take a good many thousand dollars to do so and success is not entirely assured. No doubt some action will be necessary, however.

It is your duty, as well as your protection, to report unsafe conditions to your foreman or superintendent.

# Business Meeting of the Technical Section

(Continued.)

## REPORTS OF COMMITTEES

Following the reading and discussion of the papers, the Chairman asked for the reports of Standing Committees, which were accepted as follows:—

### Report of Committee on Education.

Your committee has been chiefly occupied with work on the textbook arrangements.

A joint meeting of the U.S. and Canadian committees was held in New York, April 13th, when the report of the joint executive was considered, with progress report of Mr. Stephenson.

A financial statement showed satisfactory returns to have been secured.

Mr. J. C. Wright of the U.S. Federal Board for Vocational Education outlined their system of work and also assisted in discussions.

Upon motion, Mr. Wright was asked to make a survey of the pulp and paper industry such as had been done in other cases, and that Mr. Wright's expenses be paid for a trip to Canada for the purpose.

Resolutions have been passed in both the United States and Canada making the Joint Educational Committee trustee and administrator of all funds collected for or arising from sale of text books, etc.

The members of your committee have endeavored to assist Mr. Stephenson in his arduous duties as editor-in-chief.

In the campaign to enlist interest of students and university authorities, lectures have been given on pulp and paper making by members of this committee in Montreal and Toronto.

The mills have indicated openings for upwards of sixty students for vacation work. Details as to actual employment are not to hand.

The attention of your committee will be given in the next six months to plans for making the text books and courses available to workers.

Respectfully submitted,

George Carruthers, Nelson Gair, D. Daverin,

A. P. Costigan, J. N. Stephenson, T. L. Crossley.

### Report of the Committee on Abstracts and Publications *With Hints on Filing Abstracts*

The Committee on Abstracts and Publications is at work by virtue of the energy and activity of one of its members (not the chairman) on the preparation of the biographical list of members and proceedings of the Section since the last published report. The change of position of this member has somewhat delayed the work.

It is anticipated that a slight change in the machinery of furnishing abstracts will be proposed because of certain changes in the affairs of the Technical Association of the pulp and paper industry. The plan as now being considered is that the abstract committees shall continue to work in co-operation and that the abstracts be assembled at the New York office of the Association and distributed to journals subscribing to the abstract service. By having all the abstracts pass at one time through the hands of the secretary it is expected that considerable duplication will be avoided and your chairman will be relieved of some work as regards the preparation of the manu-

scripts submitted. It is believed that a better service will result and that it will be possible to cover the ground even more completely than is being done at present.

It is proposed that the Pulp & Paper Magazine continue to pay the abstractors working under the direction of the Technical Section Committee and to divide this expense with the American Committee while assuming at the same time its share of payments to American abstractors.

Unless it is desired that arrangements between the Abstract Committee through its chairman, who also happens to be editor of the Pulp & Paper Magazine, should be reported and reviewed by the Executive Committee, it is suggested that the chairman be given power to make such arrangements with the Technical Association as will result in the best abstract service.

It has been suggested that the chairmen mention ways in which the abstracts can be used to the best advantage by members of the Section. After some correspondence it seems to be the general practice by those who have thought the matter out to clip the abstracts and paste them on index cards. The committee several years ago prepared a classification system which covers manufacturing operations and some associated matters. Each abstract in the magazine is supplied by the chairman with a classification letter and number. The cards bearing the same number are therefore easily assembled so that a person wishing to get information on a subject, for instance, acid-making, will find all the abstracts on this subject filed under E 4. The chairman is advised that the classification for the abstracts has also been extended to other literature so that articles can be cut from magazines, which it is not otherwise desired to keep, and preserved in letter files bearing the appropriate classification symbol. The editor of the Pulp & Paper Magazine, in making up the journal endeavors to have each article that may be of permanent interest appear as a unit so that the pages may be removed with each article entire without breaking into another article which may be also worth while filing. This is accomplished by filling up the balance of the space, in case the article does not complete a page, with items of current interest only. A similar provision is made with regard to abstracts so that they may be clipped without destroying other articles that may be of permanent interest.

The annual index for 1918, of which copies can be had by any who wish them, contains a key to the classification. The index for 1919 is practically complete and the editor wishes to be advised whether there is enough desire for as complete an index as appeared last year to warrant the trouble of preparing it in that form. It will be recalled that both the main articles and abstracts were indexed separately by authors, the reading articles also alphabetically, while the abstracts were indexed according to subject under the appropriate headings.

It should be mentioned that in placing the classification number on the abstract, in case the article abstracted covers several different subjects, the several appropriate classification numbers are all given so that

cross-indexing of the files is easily accomplished by inserting a reference card to guide the searcher to the place where the abstract will be found.

Respectfully submitted,

J. N. STEPHENSON,

Chairman

### Report of Committee on Testing Moisture in Pulp.

The Committee are confining themselves to the testing of dry pulp made into bales.

At the present time there are three well known methods of testing pulp, made into bales.

1. *Strip Method.*—This is specially applicable at the mills where pulp is manufactured. As the bales are being made, the tester takes six sheets from the bale and cuts a three-inch strip from said sheets, the full width of the sheet. This sample is used for the test of that bale.

2. *Disc Method.* As adopted by the American Wood Pulp Importers Association, of which details are given hereafter.

3. Rules adopted by the Scandinavian and English Wood Pulp Association, details of which are given later. There are, of course, modifications applicable to any of the methods.

The Committee would be pleased to have the members of the Technical Section send their views as regards the methods as to which is more suitable to be adopted.

Signed on behalf of the Committee,

E. B. STUCK, Chairman.

Report of Committee from the American Paper and Pulp Association, and the American Wood Pulp Importers Association, concerning methods of sampling and testing pulp:—

#### Instructions for Sampling and Testing Pulp.

All tests must be made by a chemist duly authorized and approved by the Joint Committee representing the Association of American Wood Pulp Importers, and the American Paper & Pulp Association, and must be made strictly in accordance with the following instructions, otherwise the Committee reserves the right to withdraw the approval of any chemist at any time.

Before proceeding to the weighing and sampling, the chemist must ascertain that not less than one-half of the parcel in question is available.

*Number:* Not less than 5 per cent nor more than 10 per cent of the entire shipment, but not less than 10 bales shall be sampled. Samples to be drawn only from sound and intact bales, from different sections of the entire shipment and analyst shall be careful to observe that no unusual conditions prevail in the selection of the bales. The accurate weight of all bales sampled by sworn weigher before sampling, or, where sworn weigher is not available, by a competent person who must make sworn affidavit that weights are correct, and no other bales than those weighed to be sampled, and whenever bales are numbered the number is to be given in addition to the weight.

#### Method of Sampling

*Depth of Bore.* The sample shall be taken by boring into a bale the depth of three inches, 7.62 centimeters, with a special auger which cuts a disc about 1 inches, 25.4 centimeters, in diameter.

*Selection of Disc.* The discs shall be removed and ten of them taken as a sample, those to be selected as follows:

- 1 disc 2nd sheet from the wrapper.
- 2 " 1 in. (2.5 centimeters) deep
- 3 " 2 in. (5.05 centimeters) deep
- 4 " 3 in. (7.62 centimeters) deep

*Location of Borings:* The holes to be bored shall be so located in five successive bales they will represent a portion that extending diagonally across the bale. Each bale to be bored but once. The first hole to be bored at the corner, the edges of the cut being at a distance

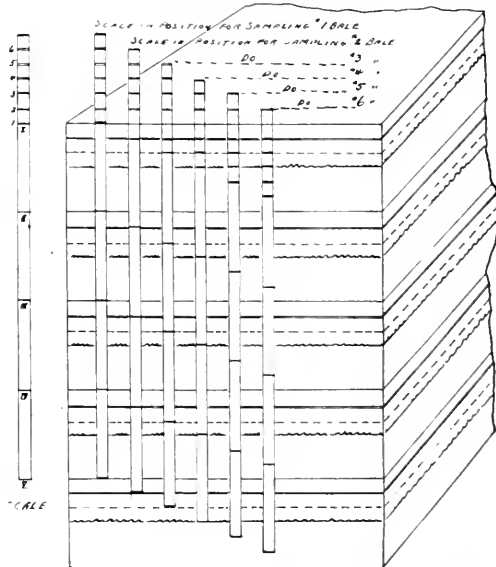


Diagram showing the method of choosing the five sheets from the bales for moisture testing.

(Method No. 3.)

*Instructions:* Take a scale (or strip of dry pulp) of the same length as the bale is high, and divide this scale into five equal parts. Number them 1, 2, 3, 4, and 5. Divide part 1 into six equal parts, and number them 1, 2, 3, 4, 5, and 6 (see sketch.)

When sampling from the first bale the scale is placed with No. 1 even at the top of the bale, while a mark is made with blue chalk at I, II, III, IV, and V.

When sampling from the second bale point No. 2 is placed even with the top of the bale and points I, II, III, IV, and V, are marked as before. This procedure is followed out for all the bales to be tested.

The five (5) sheets in the first bale are marked in the diagram by a single line.

The five (5) sheets in the second bale are marked in the diagram by a double line.

The five (5) sheets in the third bale are marked in the diagram by a dash line.

The five (5) sheets in the fourth bale are marked in the diagram by a wavy line.

The sheets in the fifth and sixth bales have not been marked in the diagram, so that it might not be too complicated.

As the bales vary in height, it is impossible to use the same scale for all sampling. Small variations in the same shipment are of little importance, but a scale that marks a 20 in. high bale cannot be used for a bale that is 24 in. high or more.

of one inch from the edge of the bale. The second cut shall then be made half way between the location of the first cut and the centre of the bale, the third bale shall be cut at the centre, the fourth bale half between the centre and corner and the fifth bale in the opposite corner in a position corresponding to the first.

All samples must be either weighed immediately after being drawn from the bales by accurate scales or, where this is impracticable, must be put into air-tight vessels, made of metal or glass with ground glass or metal stoppers, and due care must be used in the transportation of such samples until they can be properly weighed at the laboratory of the chemists. The entire bulk of samples selected from the bales must be dried out for the test. The temperature in the drying oven shall be as near to 212 deg. F. as possible, but shall not exceed 220 deg. F., nor be less than 204 deg. F.

Chemists must have proper and adequate equipment for weighing and sampling the bales and for the weighing and drying of samples.

All sampling of pulp must be done by or supervised by the approved chemist personally or by his competent bona fide assistants who will do the sampling such list to have the approval of the Committee. The chemist will be held responsible for the correct sampling by his approved assistants. The Committee shall at any time have the privilege of investigating the sampling done by chemists or their assistants.

American Paper & Pulp Association:

Herbert W. Mason.  
Joseph B. Woodruff.  
E. B. Murray.

American Wood Pulp Importers Association:

Leon Gottheil.  
S. Goldman.  
James Rosenberg.

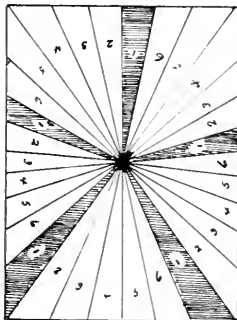
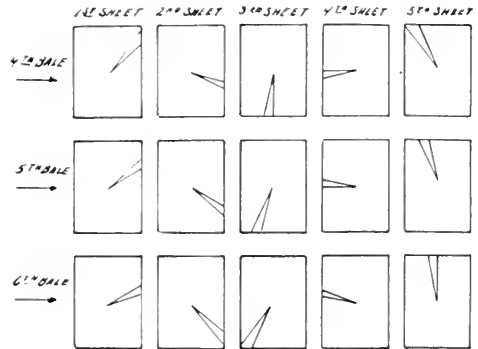
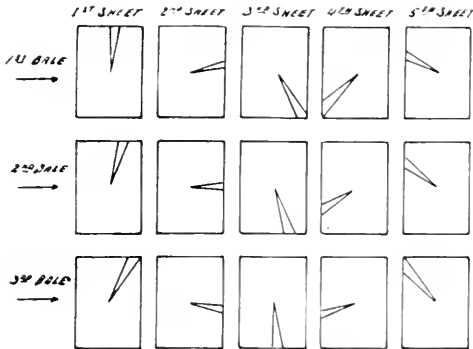
*Rules Adopted by the Scandinavian and English Wood Pulp and Paper Associations for Testing Moisture in Chemical and Mechanical Pulp.*

1. Analysis to be valid must be made not later than ten days after complaints about moisture in pulp have been made, and the chemist must have access to at least half of the total lot for sampling.

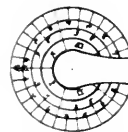
2. The sample of any lot must be taken out of a number of bales, equivalent to not less than 3 per cent nor more than 5 per cent of the total number, but, in any case, from not less than six bales.

The chemist has the right, within three days after the first sample is taken, and before the parties get the results of this first test, to again sample and test 3 per cent of the bales. The bales from which samples are taken must be in perfect condition, and shall be accurately weighed on a perfectly adjusted scale before sampling.

3. A record of the weighed bales, giving number and weight, is to be signed by the chemist in charge and by the representatives of both parties, if present.



WHEN 6 BALES ARE SAMPLED THE 30 WEDGES CUT FROM THE SHEETS WILL FORM A COMPLETE RECTANGLE AS SHOWN



METAL PLATE WITH ROUND GRADUATED DISC WHICH IS USED FOR MARKING THE WEDGES TO BE USED FOR SAMPLES

Diagram showing template used for cutting wedges, the sequence of positions, and appearance of the sheets that have been cut.

4. The method to be followed in sampling is to be as much like the English wedge or triangle system as possible.

The wedges or triangles are to be cut from the centre of the bale out to the edge of the sheet in angles of twelve or twenty-four degrees depending on the size of the sheet. Metal sheets stamped by the Associations shall be used for regulating the size of the wedges and attention must be paid to the necessity of having the edges of the samples cut sharp and clean.

The sheets are considered to be divided into 15 or 30 wedges, and these wedges must be cut out as directed, following numbers given on metal plate and in accordance with the instructions given.

5. The temperature in the drying oven shall not be over 100 deg. Centigrade.

6. The buyer and the seller, or their representatives, have the right to be present at the sampling and testing.

#### Report of the Committee on Mechanical Standards.

Please be informed that investigations have been carried out on the flow resistance in pipe lines of paper stock of various consistencies. The tests made so far are not conclusive as it has been found difficult to measure accurately when stock densities were in excess of 2.2 per cent. New devices for measuring have been designed which will be available shortly when tests will be resumed.

The work on acid-resisting bronze and bearing metals has been chiefly in the nature of going over previous investigations made by various parties. Translations have been requested of articles which appeared in some European journals. These have been received in part. The Committee is pleased to add that one of the paper companies has submitted copies of tests on different compositions of acid-resisting bronze. These data should be very valuable for purposes of comparison with information to be obtained at a later date.

Before closing, however, I desire to remark that as yet several of the mills have not returned the questionnaire sent out last January. Some of them have replied that they are too busy at the present time, but will do so at a later date. Tabulation of the answers to the questionnaire will be held up for a few months, and if the questionnaires are not received within that period the committee will be obliged to draw a conclusion from a relatively small number of mills, and we therefore would urge the members of respective mills who have as yet not replied, to use the strongest effort to have the questionnaire returned, if not in its entirety at least part of same.

Respectfully submitted,

J. STADLER,

Chairman, Mechanical Standards Committee.

#### The Text Books.

Mr. Carruthers was called on to report for the Text Book committee, but he "passed the buck" to Mr. Stephenson, who replied as follows:

I have now on hand the manuscript for the Elementary Electricity and as soon as I can get about fifty problems together to add to that, for the students to work on, it will be ready to go.

I have also the section on physics, in manuscript form. If any of you are interested in any of these matters I have the Electricity and Physics manuscripts

with me. The one on Mechanics and Hydraulics is due this month.

We have been fortunate in securing the services of two men who have been working for the past twenty-five years on the correspondence text-book work and have the preparation matter for the correspondent student so well in hand that a man can get the point without having to write two or three letters asking questions about things which should have been explained in the first place. We are endeavoring in this case to answer the questions before the student needs to ask them.

The other sections on manufacturing operations are coming along nicely. Those that are not already in hand are well under way. There are several in the room who are still working on their sections and they have told us of some of their activities and we can see that they simply had to steal time to put on this work.

I may say that if it was simply a matter of reading manuscript as received, and passing that on it would be quite a saving in time but the sending out of the manuscripts that we have received to those who have wider experience in this work has brought so many good suggestions, and we have caught so many points that might have been mis-interpreted, that it seems worth while to sacrifice a little speed and obtain accuracy.

A number in the industry are lending very great assistance in checking up and adding good ideas and that is very greatly appreciated. It is a bit unfortunate perhaps that we have had to bring this matter pretty largely before the public for a considerable time. Ordinarily you do not hear much about a book until it is about ready for publication; on the other hand, this has been so widely talked about that some people are beginning to get a little bit impatient. Their patience, however, has got to be exercised a little longer before they really see the manufacturing sections although I am sure some of these will be ready the coming fall or the coming winter.

The elementary sections will certainly be ready for school during the fall term.

#### THREE CHINESE PAPERS IN NEW YORK.

Very few people know it, but New York supports three weekly papers printed in Chinese, writes Napier Moore to the Montreal Star. We didn't know it ourselves till we read it in a local paper. There is always something fascinating about Chinese reading matter. There's nothing narrow about it. We have frequently seen Chinese characters two inches wide which merely meant "Three collars." Finding out how a Chinese paper is printed, therefore, is an interesting research. Chinese printers must first qualify as Marathon runners. There are nearly 3,000 distinct types necessary to print in the Chinese system of writing, which embodies that number of separate word symbols. And it takes a "case" almost thirty feet long to hold them. The type is set by hand, the typesetter walking back and forth, diving into different sections which are subdivided and re-subdivided and indexed according to a part of the symbol known as the "root." With several good, fast walkers on the composing room staff, an eight or ten page paper can be set up in two days.

Not dreadnoughts and fortified canals, but what our children are, will make our future nation.

## British Trade News

(From Our London Correspondent).

London, July 6, 1920.

W. E. Haskell, vice-president of the International Paper Company, contributes an article to the Special American supplement of the London "Times" on "Print Paper" and the U. S. A. situation. He has a good deal to say about Canada in the course of his write-up and dwells at some length on the question of forestry. He mentions that a few of the larger paper companies of the States, notably the International Paper Company with a production of 1,800 tons per day and the Great Northern Paper Company with a production of over 700 tons a day own extensive forests, and, in spite of their very large annual requirements of pulpwood, are in a position to carry on their business for many years with but small importations of wood to supplement that which they cut from their own reserves. Mr. Haskell goes on to say that it is gratifying to note that the United States has at last awakened to the necessity of conserving its existing forests and reforesting its cut over and devastated lands. He also points out that Canada supplied 1,000,000 cords of pulpwood out of the 5,500,000 cords used for all branches last year.

### Hard on Americans.

"It has to be frankly admitted," writes Mr. Haskell, "that the people of the United States have been prodigal in the use of most of their natural resources. They made the buffalo extinct, and the beaver nearly so; and before they awakened to a realization of a menaced shortage, had almost destroyed their birthright in the forests of the land." It is quite evident that is why there is such enthusiasm in America today for support for the Underwood Resolution, which, Mr. Haskell explains, far sighted men hope, will establish a permanent entente between the Canadians and the United States and bring about a lasting reciprocity that will be of advantage to both. Mr. Haskell tells us that Canadian manufacturers are naturally not concerned at all at the high cost of pulpwood to American mills. Under the Underwood Resolution, which provides for a commission to negotiate with the Provincial Governments of Ontario, Quebec, and New Brunswick, for the removal of the present export restrictions of pulpwood cut on Crown lands Mr. Haskell says it is argued that under proper and modern scientific lumbering regulations, the annual growth of timber on the Crown lands of Quebec alone would yield a yearly harvest of 25,000,000 cords of pulpwood without impairing the original forest asset and that if this Province should lift the present embargoes, great benefit would follow from the activity that would ensue in forest operations and from the increased receipts for ground rentals and stumpage fees. Mr. Haskell places the American view of the Underwood Resolution very concisely before the British public and it is quite evident Americans are leaving nothing undone to secure Canadian pulpwood, to take the place of what has been destroyed in the past over the border. The Underwood Resolution certainly has received a fine advertisement here from Mr. Haskell's pen.

### Late A. E. Reed's Successor.

The late Mr. Albert E. Reed's successor to the presidency of A. E. Reed and Co., Ltd., the well known pulp and paper people, is Mr. A. Ralph Reed. His election is due to a remarkable coincidence. In the great firm which his highly respected and revered father established, Mr. A. Ralph Reed has a twin brother working with him, Mr. E. Percy Reed. Both are directors of the firm, but through a "stroke of good fortune", as the witty Irishman says, Mr. A. Ralph Reed made his entry into the world a few minutes before his brother, and by virtue has accordingly been placed in the chair which his late father so ably filled. The late Mr. Reed had two valuable helpers in his twin sons and he was naturally very proud of them.

### Paper Market Dull.

There is a dullness in the paper market at present. It is due to the holiday season and the fact that consumers are well supplied for some weeks to come. Six months have now elapsed and so far as I can judge, the British people have not had to face the shortage experienced in America and Canadian provinces. Only this week I have read an announcement from a prominent Yorkshire firm stating that they would enlarge their weekly paper. Looking around the other daily and weekly newspapers there is no sign of a reduction in size and everyone seems well supplied with newsprint and paper of fine printing quality. Of course, London is the dumping ground of all the foreign mills and for this reason there is always a stock lying up in some corner of the city to pick and choose from. Consumers, however, are still putting up their prices for their newspapers and trade journals and these are announced in cases where new contracts are being entered into.

### Bamboo.

There is a Timber Trades Exhibition here in London. It was opened by the Duke of Connaught's son and I saw a fine exhibit of bamboo from East Africa for manufacture of pulp. Later on we are to be shown samples of paper made from this particular bamboo. Many hundreds of square miles in the East Africa Protectorate are covered with this raw material and the Imperial Institute for Technical Trials are making arrangements for experiments to determine the suitability of the bamboo for paper making. Mr. W. A. Raitt, of India, is here at present and no doubt he will have something to say on the quality of the East Africa raw material. There is one thing certain, bamboo and peat pulp will never compete with groundwood and that is the opinion of some of the biggest buyers today in England.

### U. S. A. Newsprint.

We are told that America could consume another 100,000 tons of newsprint in the year; we are also told that across the border they want more newsprint and more pulpwood to keep down the "sufferings" of the small publishers. In fact as one reads the newspaper reports and the trade journal reports in England one would come to the conclusion that the States could not even sell an ounce of newsprint to the British consumer. But the States newsprint seller is "Ca-Canny," as the Scotsman says. The London American Consul caused consternation this week by making the following announcement from an American firm: "Will you kindly give us a list of the larger news-paper dealers in England and approach them in our name or let us know who they are, with

the purpose of buying and selling newsprint and other papers made in the U. S. A. and England. We possess very good mill connections and can supply "news" and book papers in "quantity". Firms here would like to know what is up with the American market? Now it is the Underwood Resolution became an agreed compact between Canada and America, the States would make paper from Canadian pulpwood and compete with Canadians in the British market for papers and probably oversell them. They certainly could beat Canada in quicker deliveries. But let it not be said there is a shortage of newsprint in the States when "large dealers" can be supplied in England by the real American (2) article!

### EXPERIMENT WITH PEAT AS A SUBSTITUTE FOR WOOD PULP.

(From Our London Correspondent).

London, July 1, 1920.

The Bog of Allen and other famous bogs in Ireland are notable for a plentiful supply of peat (which is really a decayed vegetable substance resembling turf and used as a fuel by Irish homesteads) which is at present under trial and being experimented upon as a substitute for wood pulp. At a gathering of paper men yesterday in the Manchester School of Technology it was proved by a demonstration that peat was capable of being used in the manufacture of paper when reduced to a pulp, but to enter into competition with wood pulp, such as Canadian, is at the moment a problem beyond the dreams of avarice. I can, however, state that I have seen a specimen of the paper from peat pulp as its raw material, and there is no doubt it is a marketable product. Should it come to pass that peat eventually enters into the paper mill as a pulp I have no hesitation in saying from my experience travelling through Ireland that there is at least 50 years supply, provided that the "turf rights" can be secured from the ground landlords and the Crown authorities who own extensive areas in the country.

#### An Explanation.

The party of paper men who accepted invitations to attend the demonstration in the College was small. The person responsible for the experiments was Mr. A. L. Burlin, the inventor of the process for reducing the peat to pulp, he is ably assisted by W. T. Cheetham Brooks, a manufacturer of dyes, colors, etc., in Manchester.

Before the demonstration commenced Mr. J. Hucheng, M. Sc. Tech., F. I. C., the chief director of the Dispensary of the College, explained that the College itself was playing no part in the test, except that of providing the necessary facilities under a regulation which allows such use to be made of the machinery only when the test cannot be made elsewhere in the ordinary course of business.

After the explanation of the College's part in the test, Mr. Burlin produced the peat pulp and the College papermaking machine and attendants did the rest of the work. A bleached paper was produced and handed around to the practical men to examine. It was regarded as a paper of which the market could make good use and one or two sellers said they could freely dispose of a number of tons of it without delay. The only fault to be found with the paper was the appearance of dark specks in it, but Mr. Burlin said these could be eliminated by using a sieve!

#### English Peat Versus Irish Peat.

Mr. Burlin exhibited to the company specimens of the peat he used and also showed the peat reduced to pulp. He said that the specimens he had just used came from the Fens Bank, on the borders of Shropshire and Cheshire, in England, and was not at all the best for pulp. Irish peat was infinitely better because of the superiority of its fibre. His aim was to produce a substitute for wood pulp used in the making of newsprint. In this connection he claimed that his invention, if practically applied on a sufficiently large scale, would prove of enormous national importance in view of the great scarcity and ever-increasing demand for wood pulp.

#### Past Experiments a Failure.

Commenting on previous tests by other scientists, Mr. Burlin explained that attempts had been made before to produce a satisfactory pulp, but the mistake had been made of destroying the fibre instead of preserving the fibre and its properties. His process, he said, was so simple that large quantities of pulp could be produced without any moving machinery. Provided with the necessary apparatus, he could turn out within a month at least 50 tons of unbleached pulp, and within another month 50 tons of bleached pulp in addition. He added that from the tough roots extracted from the peat a trade in brushes could be developed and that a London firm had already offered to pay £12 a ton for the liquid extracted from the peat.

#### Peat Pulp Can Help Wood Pulp.

Mr. T. Cheetham Brooks expressed a hope that sufficient financial help would be forthcoming to enable the process to be applied in England instead of allowing foreigners outside the Empire to take advantage of it. In view of the great shortage and high price of wood pulp, the invention would be of value even if it permitted the manufacture of nothing but of brown paper, for the demand on wood pulp for that purpose would be relieved. It had already been demonstrated that wall-papers, paper board, and a host of other things could be produced from peat pulp; and any maker of newsprint must admit that even if he could get not just the quality he wanted from the peat pulp it would be very valuable if the result could be obtained, say, by mixing 50 per cent of peat pulp with an equal quantity of wood pulp.

To handle the invention adequately it is estimated that about £250,000 will be required and if that sum can be raised it is anticipated that in 18 months Mr. Burlin's invention of reducing peat to pulp will pay capitalists back the money. Of course, I do not know whether this £250,000 would include the purchase of rights to cut peat. In Ireland, peat being the staple fuel, there might be a difficulty in securing those rights; if they could be obtained there is half a century's pulp from peat for the paper mills.

The whole success of the invention now depends on the support of the capitalist.

#### PULP CO. CHANGES NAME.

The Western Pulp and Lumber Trading Company, Ltd., of Vancouver, B. C., announces that its name has been changed and that hereafter the business of the company will be carried on under the name of the Canadian Commercial Company, Limited.



## Financing Industrials Easier

B. K. S. in the Journal of Commerce.

The feeling of the financial community in regard to the outlook for 1920 in Canada has become much more confident in the weeks just past. The chief factor in the change is the knowledge that there will be no government loan during the year. This means that the year's accretion's of wealth will be available for the needs of ordinary current business, and that much necessary financing for industry and commerce will be possible which could not have been carried out if another half billion, or even half of that amount, had been abstracted from the funds of private capital for governmental purposes.

The summer should see the banks greatly relieved of their present burden of loans and strengthened in cash resources. A good deal of bank money has had to be used during the last two or three years for the carrying on of business operations which ought to have been financed by bond or stock issues, and the withdrawal of the Government from the money market will make possible the selling of large amounts of such securities and the cutting down of bank loans out of their proceeds. The promoters of the British Empire steel merger appear also to have abandoned their idea of raising any large proportion of their new capital in this country, which is a further sentimental relief to the local money market, as a matter of twenty-five to fifty millions of dollars for a single industry is still a fairly large order in this Dominion.

### Interests Rates High but Stocks will be Restored

The rate of interest or dividend which will have to be paid for new capital will undoubtedly be high; but if there had been a large Government loan the rate on private offerings might have become almost prohibitive. Most of the new securities will probably take the form of eight per cent preferred stocks, but in order that the industry may not be perpetually burdened with this rate of interest there will be provisions for the retirement of the stock at a substantial premium after a few years. The new issues when in the form of bonds will probably be almost entirely short-term, unless the market becomes clogged with that class of maturity and it becomes necessary to add ten or fifteen years to the life of the bond as an extra inducement, in which case the same retirement device may be adopted in order to limit the possible profit of the bondholder in case of a heavy drop in the rate of interest.

### Money Will be More Available

It must be admitted that expectation of a substantial drop in the rate of interest after a period of three or four years seems not unreasonable. The shortage of capital is the result of an unprecedented consumption of that article by all the governments of the world. The process of government borrowing is drawing to an end everywhere. If the shortage of borrowing is accompanied by any serious effort to reduce government indebtedness, it will mean the handing back to private owners of vast sums of capital year after year for re-investment in private enterprise; and these sums of capital will consist of funds compulsorily saved by the community out of its current income under the pressure of taxation. Some people maintain that this pressure of taxation will tend to diminish ordinary voluntary thrift, but there does not seem to be much danger of that catastrophe occurring in a country like Canada, possessing great natural resources and a keen-

ly ambitious and intelligent population, or for that matter in the United States either, where the rate of interest for this continent will doubtless continue to be set.

### Movement of English Capital to Canada

The rate of exchange will doubtless continue to be adverse to Canada in the United States as long as it is adverse to Great Britain, and this together with the unprecedented volume of tourist traffic from the Republic will tend to promote an ever-increasing flow of American capital in this direction. As soon as sterling becomes normal there will be a resumption, on a moderate scale at first, perhaps, but with ever-increasing pressure, of the movement of British funds to this country. This movement will be on new lines, differing from those on which British capital was brought to Canada before the war; for it will consist largely in investment in the senior securities of our industrial concerns, accompanied probably by a moderate amount of participation in their control and management, whereas in past years British capital has sought investment chiefly in public and public-utility bonds. Thus, great as the requirements of Canadian development for new capital will be, there seems to be a good prospect of their being met with an adequate supply and the difference between the rate of interest demanded for corresponding classes of investment in Canada and the United States ought to be materially less after the war than it was before.

### GAS MASKS IN PULP AND PAPER MILLS.

Gas masks of a nose-breathing type with canisters containing special chemicals are used in the digester house of the U. S. Forest Products Laboratory to give protection against sulphur dioxide. These masks enable the operator to make repairs under conditions otherwise unbearable and soon pay for themselves in time saved. Masks of this type are reported by the Bureau of Mines to hold up against a 5 per cent. concentration of sulphur dioxide for about 15 minutes. When it is realized that 5 parts of sulphur dioxide to one million parts of air can readily be detected, and that at a concentration of 150 parts of sulphur dioxide to one million parts of air the air becomes unbreathable, some idea can be gained of the life of a canister even under adverse mill conditions.



In addition to their use in the sulphite mill, these masks are of great assistance in the bleach room, where they are worn continuously during the mixing of the bleach liquor. Aside from monetary considerations, the increased comfort and safety of the workmen is sufficient argument in favor of the addition of gas masks to the regular mill equipment.

The picture of courtesy Raquette River Paper Co.

### MOON HEADS SYRACUSE FORESTRY SCHOOL.

Syracuse, N.Y. —Franklin Moon has been elected Dean of the New York State College of Forestry at Syracuse by the Board of Trustees, the election to be immediately effective. By this action of the Trustees one of the earliest members of the College of Forestry faculty becomes Dean of the College, for Dean Moon became Professor of Forest Engineering in 1912, a few months after the college was founded.

Dean Moon was graduated from Amherst College in 1901 with degree of Bachelor of Arts. From 1902 to 1904 he was engaged in graduate study at Harvard and was for several years in business life in New York City before he decided to take up forestry, and in 1909 secured the degree of Master of Forestry at Yale. During 1908 and 1909 he was engaged in forest reconnaissance in Connecticut and for the Federal Forest Service in Kentucky. For the next two years forester for the New York State Forest, Fish and Game Commission under Commissioner Whipple, having charge of the Highlands of the Hudson Forest Reservation, the nucleus of what is now the Palisades Interstate Park, the world's greatest park. Prior to coming to Syracuse, Dean Moon investigated forest conditions and forestry practice in France, Germany and Switzerland. He has written two noteworthy forestry books, one a text-book for forestry students and the other a forestry book for boys. He is one of the Executive Committee of the New York State Forestry Association, which has its headquarters in Syracuse.

### MANUFACTURE OF PAPER PULP FROM POPYRUS IN SOUTH AFRICA.

(Vice-Consul Charles J. Pisear, Cape Town, March 15, 1920.)

Arrangements for the manufacture of paper pulp from papyrus grass in Zululand are now in progress. A Norwegian company (Walmer Papyrus Pulp Co.) has secured a concession over several hundred square miles from which to reap all reeds and papyrus grass, which are considered to be excellent raw materials for manufacture of paper pulp. The company is capitalized at £160,000 (\$779,000). A factory capable of turning out 6,000 tons of pulp a year is now being erected at Umfolosi. Most of the machinery and equipment was obtained in the United States.

The company intends at first only to manufacture paper pulp. It is estimated that it will take fully 10,000 tons of raw material to produce the 6,000 tons of pulp, but as the growth of this grass is perennial, and the area where it is found is so extensive, an abundance of raw material is assured each year. The papyrus has to be cut by hand, in the same way as sugar cane. The grass is dried, passed through a cutting machine, and then pressed and limeswashed. An abundance of cheap colored labor is available. Later on the company intends to extend its operations to the manufacture of paper, textiles, and bags.

### PAPER CRISIS IN HOLLAND.

The Nieuwe Rotterdam Courant states that last week the Association of Newspaper Directors held a meeting in connection with the serious situation in the newspaper industry caused by the abnormal rise of paper prices.

At the meeting many paper men stated that the cost of paper for their journal exceeded the net selling

price considerably. It was alleged that without taking drastic measures many papers would be ruined.

It was decided unanimously to take joint action in the matter probably resulting in a restriction on the paper consumption and an increase of rates for subscription and advertisements.

### WHY NEWS PRINT PRICES MAY GO HIGHER.

The publishers of newsprint are probably as keenly interested in the rainfalls as any other class of people, says the Fourth Estate.

We particularly refer to the rainfall covering the areas that supply the rivers, and which, in turn, through their hydraulic development are creating day by day, the ground wood pulp which represents from 75 to 80 per cent. of the stock in all news print paper.

Those who carefully follow the rainfall records covering the pulp making belt, know the rivers are exceptionally low, and hence a very great shortage in ground wood at this time.

Under normal conditions, stocks of ground wood would be accumulated during high water period which would make up the deficiency during the low water period, but these normal conditions do not today maintain, for two principal reasons:

First. The mills, not normally news print mills, that have gone onto news print on account of the extreme high prices, are not equipped with their own ground wood plants, have, to a considerable extent, absorbed the spring surplus through the high prices they have been offering and paying.

In this connection it is well to bear in mind that the mills of this type have been turning out news print paper at the rate of, approximately, 125,000 to 150,000 tons per year, which enables the reader to appreciate what their invasion of the ground wood surplus means.

Second. Some of the largest operators in London in ground wood pulp and sulphite have been scouring the Canadian market to secure ground wood pulp for British mills, and if reports be true they have practically made a clean-up of the surplus stocks in Canada, which ordinarily would be drawn upon by American mills to cover the low water period.

In contemplating the probable conditions for the balance of this year, or at least until we have the big fall rains, publishers will better understand the basis on which **The Fourth Estate** has expressed the belief that the news print situation, before the year 1920 is finished, will probably be more acute than it has been at any prior time.

It is to be hoped that we shall not see a run-away market, but, instead, find publishers practicing still more rigid economy than even now is being practiced, and thereby meet this situation which seems probable. Or, we might all pray for rain in great abundance, and in that way, if our prayers are answered, take care of what we might otherwise be a trying situation.

### COMBINED BAG AND ENVELOPE.

Bemis Bro. Bag Co. of St. Louis have devised a combined bag and envelope for use in making parcel post shipments. The envelope is of high grade bond paper, 3 5/8 x 6 3/4 inches, open at the end. The closed end is sewed to a stout cotton bag whose size varies from 1 1/2 x 2 to about 8 x 15 inches. Separate spaces are provided for letter postage, parcel post postage and for the address, on the envelope.

### DOMESTIC CHINA CLAY IN U.S.A.

Possibly the known deposits of china clay or kaolin the world over are more numerous and extensive than is generally realized. China clay in Cornwall and Devon is of paramount importance, both in quantity and quality, so far as present operations exist. China clay deposits are, however, being worked or are easily accessible to the miner in many parts of the world other than Devon and Cornwall.

Deposits have been located in Brazil, South Africa, Ceylon, and Russia; and kaolin is produced actively in Sweden, Denmark, France, Germany, Canada, and United States of America.

The china clay industry of England holds its own firstly because its quality for many purposes has not been beaten. Many causes, however, contribute towards the successful operations. Geographical position for easy and ready transit, and the supply of necessary ships, is all in favor of the English industry. It may be well though to observe what others are doing in kaolin production outside Devon and Cornwall. The United States of America accounts today for an approximate production of 300,000 tons. Among the States in which active operations are in progress may be mentioned Delaware, Virginia, North Carolina, South Carolina, Georgia, and Florida. The product naturally serves essentially the American market. The deposits are mainly sedimentary, carried in geological ages great distances from granite formations and spread over enormous areas in varying depths of from forty to a hundred feet. The percentage of kaolin to impurities is extraordinarily high. This has the effect of rendering "washing," even hydraulically, practically impossible. The clay has to be broken out mechanically, and sometimes blasting is resorted to. In solid form the material is conveyed to the surface of a pit and transferred to breakers and blungers. From here it then goes through an inferior adaptation of the English system of water washing and mica drag refinement to settling pits. It is then passed through filter presses and conveyed to rather temporary looking sheds and laid on racks. These sheds are fitted with a multitude of small bore pipes passing under the racks and conveying the exhaust steam from engine boilers. The final product is then frequently packed in large bags made of a strong paper and loaded into rail cars or wagons of about 40 tons capacity.

The clay is certainly free from an excess of moisture but is usually of an unkind, dry nature, lacking that fatty fineness of the English product. Although the Devon and Cornwall clays have preference, the American consumer has been driven to use unwillingly the domestic clays in larger and larger quantities during the unsettled and limited conditions of shipping. As these conditions improve, so presumably will the American consumer revert to English clays with which to hold his own in the world's competition of his paper, pottery and other manufacturers. It is, however, essential for the Englishman to give careful attention to quality, fineness, moisture, and cost of production.—China Clay Trade Review.

### EDMONTON NEWSPAPER INCREASES PRICE.

The price of the Edmonton Morning or Evening Bulletin delivered by carrier is now 25 cents per week, instead of 15 cents as heretofore. The subscription rate by mail is increased from July 1 to \$8 per year, and by carrier to \$12 per year.

### THE BELGO PAPER COMPANY LIMITED.

Among recent incorporations that will interest the paper industry is that of the Belgo Paper Company, Ltd., with head office in Montreal and capital stock of \$20,000,000. This company will supersede the Belgo Canadian Pulp and Paper Company, Limited, which was established at Shawinigan Falls on the St. Maurice River eighteen years ago. The company has grown from a two story building with 24 eighteen inch grinders, thirteen wet machines and two drying machines with a production of eighty tons of dry ground-wood per day to an extensive plant producing 177 tons of ground wood, 90 tons of sulphite, 206 tons of newsprint and employing about 1200 men. The company is now erecting an extension and installing four magazine grinders which will increase the capacity of the ground wood mill by eighty tons. The additional tonnage will eventually be converted into paper when two additional paper mills are installed.

### TUCK GOES TO DAYTON.

Mr. L. S. Tuck, a member of the Technical Section of the Canadian Pulp and Paper Association has migrated from Kenogami, Quebec, where for some years he has been engineer for the firm of Price Brothers and Company, Limited, to Dayton, Ohio. His new connection is with the Management, Engineering and Development Company which is at present engaged in a number of engineering and constructing projects for pulp and paper mills. This company handled the large proposition recently carried out in connection with the extension of the Espanola plant of the Spanish River Pulp and Paper Mills Ltd. One of the features of this extension is a machine room roof of gypsum blocks for which the roof trusses were designed by the Management, Engineering and Development Company. This type of roof is not only entirely free from corrosion but is an excellent nonconductor of heat, is light in weight and suitable reinforcement can be laid for nine foot spans. Because of its composition it does not require painting to give a fine ceiling to the machine room and needs only to be protected above from weathering and damage by clipping.

### BIG POSTAL LOST ON NEWSPAPERS.

Last week in Ottawa the amendments to the Postal Act, Senator Proudfoot urged that the parcel post rates be increased, but the newspaper postal rates remain as they are. He claimed the parcel post service was costing the country millions, and was benefitting the mail order houses at the expense of the country merchant. It was also demoralizing the mail service, and was drawing the wealth of the country to the large centres. The proposed measures would tax newspapers for the benefit of the mail order houses. Parcel post rates should be at least equal express rates.

Hon. Pierre Blondin replied that the parcel post system more than paid its way, and the newspaper postage rate caused a loss of over five million dollars annually. The parcel post system had been introduced to reduce the cost of living. To protect local merchants the zone system was established. The immense deficit in the Post Office Department was due to the rural mail routes. These were now being conducted at a large loss, and no new routes were being organized, nor would be, until better conditions prevailed. This loss was due to the immense increase in the cost of rural carriers' wages, etc.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**B-2. Successful tree growing on prairies.** Norman Ross. *Can. For. J.*, March, 1920, p. 102. See also p. 119.—C.L.

**B-2. A guide to Ontario tree planters.** F. S. Newman, Ontario Forestry Branch *Can. For. J.*, February, 1920, page 77. C.L.

**B-2. Working for posterity.** Allan Donnell, *Can. For. J.*, October, 1919, p. 391. Forest planting by Laurentide Company, Riordon Pulp and Paper Company, Abitibi Power and Paper Co., etc.—C.L.

**B-2. Rate of growth of British Columbia's forests.** R. D. Craig. *Pacific Coast Lumberman*, April, 1920, p. 47. Answers an editorial in the March issue, bearing on the statement that the growth of new timber is five times the annual cut. There is sufficient forest land on which to grow about five times the amount annually cut but that the realization of this increment is contingent upon the protection of the young growth from fire.—C.L.

**B-2. Reforestation now necessary.** Ellwood Wilson. *Can. For. J.*, October, 1919, p. 420. Cutting arranged to rotate over replanted areas; seaplanes for surveys and fire protection; plans of the Laurentide Company, Ltd.—C.L.

**B-2. Big companies try out forestry methods.** *Can. For. J.*, October, 1919, p. 408. Forest research work of Laurentide Company, Quebec Forest Service, Bathurst Lumber Company, Commission of Conservation, New Brunswick Forest Service, Dominion Entomological Branch of Riordon Pulp and Paper Co.—C.L.

**B-2. Wantonly wasting many growing forests.** Frank I. Ritchie. *Can. Lumberman & Woodworker*, February, 1920, p. 55. Discusses articles on reforestation published in the *Financial Post* of September 27, 1919. Analyzes costs of forest planting; bogus settlers; prohibition of the exportation of pulpwood; better forest protection, closer utilization.—C.L.

**B-3. Forest fires in Alberta.** *Can. Lumberman & Woodworker*, February 15, 1920, p. 66. A summary of the situation in 1919.—C.L.

**B-3. Fire protection on Dominion crown lands.** D. R. Cameron. *Can. For. J.*, October, 1919, p. 395.—C.L.

**B-3. The airplane in forest patrol.** Milton R. Klepper. *Can. For. J.*, October, 1919, p. 415. See also p. 416.—C.L.

**B-3. Aircraft and timberlands.** Stuart Graham, Manager Aviation Department, St. Maurice Forest Protective Association. *Can. For. J.*, November 1919, p. 435. See also pages 438 and 441. See also article by Mr. Graham in the January, 1920 issue at page 44.—C.L.

**B-3. What starts the forest fires?** *Can. For. J.*, October, 1919, p. 411. Dry weather and dry electrical storms given as the chief causes.—C.L.

**B-3. Wind and fire damage to forests.** Frank J. D. Barnjum. *Can. For. J.*, March, 1920, p. 127. The damage caused by winds to the forest is greater than the annual growth.—C.L.

**B-3. Can lumbermen afford to burn debris?** *Can. For. J.*, February, 1920, p. 84. Costs of slash disposal, as reported at the Montreal meeting of the Quebec

Forest Productive Assn., and the annual meeting of the Canadian Society of Forest Engineers. See also p. 86.—C.L.

**B-3. Protecting British Columbia's Forests.** W. Turnbull, *Pacific Coast Lumberman*, February, 1920, p. 30. Discusses the forest fire situation in 1919. The season was one of exceptional hazard. Campaign of educational propaganda; enforcement of legislation; increased forest protection tax; portable forest fire pump; expenditures on forest protection.—C.L.

**B-2. Abitibi Company prepares to handle its forest constructively.** *Can. For. J.*, Nov. 1919, p. 458. Appointment of H. G. Schanche as forester to the Company; forest planting program; fire protection; control of damage by insect and fungi; regulation of cutting methods.—C.L.

**B-2. New Brunswick's timber regulations.** *Can. For. J.*, Nov. 1919, p. 459. Diameter limits, stump height, trimming allowance, size of tops; protection of young growth, etc.—C.L.

**B-2. Quebec logging slash a great menace.** Henry Sorgius. *Can. For. J.*, Nov. 1919, p. 460. The presence of logging slash adds very greatly to the difficulty of preventing and controlling forest fires.—C.L.

**B-2. Forest sample plots at Petawawa.** *Can. For. J.*, Nov. 1919, p. 469. Research work by the Dominion Forestry Branch on the Petawawa Military reservation, Ontario.—C.L.

**B-2. Putting back a new forest.** Ellwood Wilson. *Can. For. J.*, Nov. 1919, p. 470. Discusses the problems relating to the conservation of eastern Canada forests; the hardwood problem; fire protecting forest planting.—C.L.

**B-9. Canada's Timber—What she is doing with it.** *Can. Lumberman & Woodworker*, March 15, 1920, p. 56. A summary of the report of the Committee on Forests, Commission of Conservation, prepared by Clyde Leavitt, Chief Forester, for presentation at the annual meeting of the Commission. Discusses the situation in each of the several provinces. Value of Canada's timber trade; elimination of waste in logging work of the Quebec Forest Protective Association; need for Provincial Forester in Nova Scotia; Tribute to Dr. B. E. Fernow; Survey of Ontario's forest resources; Slash burning; aerial patrol; spruce budworm, etc.—C.L.

**B-9. Plain statements on Canada's forests.** Frank J. D. Barnjum. *Can. For. J.*, January 1919, p. 27. A discussion of the limitations of the Nation's wood supply with a suggestion as to remedies. Campaign of education, increased fire protection, reforestation, slash burning, closer supervision of woods operations, and an embargo or export duty on raw material taken from fee lands; or the annual purchase of the fee land wood by a combination of all the Canadian mills.—C.L.

**B-9. The forestry problem in Ontario.** E. J. Zavitz, Provincial Forester. *Can. For. J.*, March, 1920, p. 122. How the Province can take highest profits from 50 million acres of forest lands; need for demonstration forests; forest planting; woodlot forests in southern Ontario.—C.L.

**B-9. Senate requests report on lumber industry.** Amer. Lumberman, February, 28, 1920, p. 1. Resolution by Senator Capper of Kansas, directing the Secretary of Agriculture to report to the Senate the facts as to the depletion of timber, pulpwood and other forest resources in the United States; relation to high cost of materials, and to permanence of domestic industries.—C.L.

**B-9. Canada's forests as a crop.** Clyde Leavitt, Can. For. J. Oct. 1919, p. 387. Essential supplies for industries not maintained under present methods of woods management. Economic importance of Canada's forests; the problem of hardwood utilization in the mixed forests; cutting regulations; forest revenues of the eastern provinces.—C.L.

**B-9. Forestry legislation in Canada during 1919.** F. W. H. Jacombe. Can. For. J., January, 1920, p. 33. A resume of forestry legislation concerning Dominion and provincial forest lands in 1919.—C.L.

**B-9. An "Insurance policy" on Canada's Great Paper Industry.** Geo. Chahoon, President Laurentide Company, Ltd. Can. For. J., January, 1920, p. 34. Need of scientific system in operating woodlands; reforestation work of pulp and paper companies; forest research; proper management of forests.—C.L.

**B-9. Fundamental common places in forestry.** Dr. B. E. Fernow. Can. For. J., January, 1920, p. 35. Forestry is the growing of wood crops as a business. It requires a large amount of capital and a long time for its products to mature; requires large areas of non-agricultural soils; foregoing present revenue for the sake of future greater revenue. In general, forestry as a business can be successfully applied only or mainly by the community, municipality, or state, though large long-lived corporations, such as pulp and paper companies, may be an exception. C.L.

**B-9. America's big job ahead.** Filibert Roth, Prof. of Forestry, Univ. of Michigan. Can. For. J., January 1920, p. 39. To secure timber it will be necessary to start at once a National forest policy.—C.L.

**B-9. Sweden's scheme for growing forests.** H. C. Wallin. Can. For. J., February 1920, p. 51.

**B-9. Keeping Coast forests productive.** Hon. T. D. Pattullo, Can. For. J., February 1920, p. 67. Fire prevention; estimate of supply; natural regeneration; insect damage; development of the pulp and paper industry; need for forest research; provincial revenue.—C.L.

**B-9. Conditions in Prairie Province forests.** H. C. Wallin, Dominion Forestry Branch. Can. For. J., Feb. 1920, p. 75. A summary of reconnaissance surveys by the Forestry Branch in Manitoba, Saskatchewan and Alberta.—C.L.

#### PULP SCREENING PATENT.

Anton J. Haug, Nashua, N. H., assignor to Improved Paper Machinery Company, Nashua, N. H., a corporation of Maine. Filed Jan. 28, 1918. Serial No. 214,088. 13 Claims. (Cl. 92-35. U. S. Patent, 1,319,705. Claim No. 1. In an apparatus for screening pulp, the combination with a tank, of a submerged screen drum, an inlet for feeding stock to the interior of the drum, said inlet being below the level of submergence, an outlet communicating with the tank for withdrawing the screened stock, whereby said stock advances progressively through said drum from the inlet toward the outlet, a tailings outlet for said drum, and means for vibrating the drum.

#### T. A. P. P. I. TO MEET AT SARATOGA.

On September 1 to 3, 1920, the Fall Meeting of the Technical Association of the Pulp and Paper Industry will take place at Saratoga Springs, N. Y., with headquarters at the Grand Union Hotel. The program gives assurance of a most interesting and instructive meeting.

The business session will open on Wednesday morning September 1, at 9:30 o'clock, in the Casino. Officers and committee reports will be presented, followed by papers on special subjects, an especially important one being on the Washing of Felts. In the evening members and guests will be entertained at dinner by the paper manufacturers of the Hudson River Valley and vicinity. The speakers thus far selected include Mr. C. R. McMillen, of the Union Bag and Paper Corporation, who will act as toastmaster; Mr. Phillip T. Dodge, of the International Paper Company, and Colonel C. H. L. Jones, of the Spanish River Pulp and Paper Mills, Limited.

Thursday, September 2, will be given up to mill visitations, followed by a steamboat excursion on Lake George in the evening. It has been arranged to pay visits of inspection during the day to the plants of the International Paper Company, Finch, Pruyn and Co., Union Bag and Paper Corporation, Standard Wall Paper Company and Sandy Hill Iron and Brass Works. Automobiles will be provided to convey the members to and from the places visited.

On Friday the members of the T. A. P. P. I. and their guests will be taken to the works of the General Electric Company, at Schenectady, where the machinery and electrical apparatus used in pulp and paper mills will be shown in the making. The visitors will subsequently be the guests of the General Electric Company at luncheon. In the afternoon it is planned to visit the felt mills of F. C. Huyek and Sons and the Albany Felt Company.

T. A. P. P. I. asks the pulp and paper manufacturers who are represented by membership in the association to take a broad and generous view of this gathering of the technical men of the industry and arrange for a good attendance on the part of members connected with their mills, or of prospective members. The stated meetings of T. A. P. P. I. afford valuable opportunities for the discussion of common problems, new developments, methods and processes, and it is hoped that mill executives will appreciate the advantages to be derived from their technical advisers coming in personal contact with the engineers and chemists of other mills in the way made possible by the Fall Meeting of T. A. P. P. I. at Saratoga Springs, N. Y., Sept. 1-3, 1920.

Respectfully,  
Thomas G. Keenan,  
SECRETARY.

#### GAS MASKS FOR FOREST RANGERS.

Necessity taught the English and Americans the use of gas masks. Now these same accessories of war have been put to use in fighting attacks of the destroyer in nature.

At the Centennial Exposition in Portland, Me., last week, the S. D. Warren Company had a novel booth. An old-fashioned plant was shown, in which one girl dipped shits on a hand moul, another dried them, while a boy printed them on an old Franklin press. It was very popular and instructive.

### U. S. PAPER STOCKS ON HAND.

Stocks of all grades except newsprint, felts and building, and specialties, decreased during the month. Stocks of all grades reported by manufacturers at the end of May amounted to 182,543 tons, including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported newsprint stocks and tonnage in transit aggregating 176,843 tons.

Comparing the stocks on hand at the domestic mills on May 31st, with their average daily production based upon the combined production for the years 1917, 1918 and 1919, the figures show that:

Newsprint paper mill stocks equal slightly more than 5 days' average output.

Book paper mill stocks equal slightly less than 8 days' average output.

Paper board mill stocks equal slightly less than 7 days' average output.

Wrapping paper mill stocks equal slightly more than 11 days' average output.

Bag Paper mill stocks equal slightly less than 6 days' average output.

Fine paper mill stocks equal slightly less than 26 days' average output.

Tissue paper mill stocks equal slightly less than 13 days' average output.

Hanging paper mill stocks equal slightly more than 3 days' average output.

Felts and building paper mill stocks equal slightly more than 11 days' average output.

Miscellaneous paper mill stocks equal slightly more than 23 days' average output.

Total paper mill stocks of all grades equal slightly more than 9 days' average output.

### Imports and Exports.

The imports and exports of all grades of paper for April 1920 compared with April 1919, as shown by the records of the Department of Commerce were as follows:

	Imports:		April 1919 Value
	April 1920 Value	April 1919 Pounds	
Newsprint	\$4,959,478	88,853,841	\$3,060,366
Book Paper	71,260	11,432	6,393
Wrapping	48,309	246,974	20,578
Hanging	29,749	.....	16,673
All other grades*	148,030	.....	187,726
<b>Exports:</b>			
Newsprint	381,215	16,587,909	747,328
Book Paper	1,028,546	12,885,975	1,360,694
Paperboard	335,839	5,802,781	120,417
Wrapping	708,957	6,467,193	595,522
Bag	147,733	782,031	91,307
Fine	623,575	7,205,107	1,161,139
Tissue	315,458	697,246	124,222
Hanging	99,783	1,119,969	129,658
All other grades*	779,919	5,512,515	731,857
Total Imports	\$5,256,826	.....	\$3,291,736
Total Exports	1,421,025	57,060,726	5,362,610

\*Includes some paper already converted into commercial articles.

Newsprint is the only grade of which the United States is a heavy importer. Practically all of this tonnage, the value of which amounted to \$4,959,478 for

April 1920 is imported from Canada. The value of the exports of newsprint in April 1920 amounted to \$381,215 which is slightly less than 8 per cent. of the newsprint imported.

Book paper, Wrapping paper, Fine paper, Newsprint and Paperboard were the principal grades exported, the combined value amounting to \$3,078,132 for April 1920.

The value of the total imports for all grades was almost 8 per cent. greater than for March 1920 and more than 59 per cent. greater than for April 1919. The value of the total exports for April 1920 was \$941,615 less than the value of the exports for April 1919, and was \$835,801 less than the value of the imports for April 1920.

In May 1919, 1,147 paper machines lost 197,550 hours. In May 1920, the time lost by 439 machines was only 61,823 hours, and of that, only 592 hours was due to lack of coal. Transportation troubles are not recorded separately, but would certainly be an important factor.—Federal Trade Commission.

### PRICES OF WALL PAPER IN THE U. S.

The following is a tabulation of the high, low and average prices paid by wall paper concerns for stock during May, 1920.

Grade	Grade			F. O. B.	
	High	Low	Average	Mill	Contract
No. 2 White Hanging:	\$10.00	\$3.50	\$4.97	Mill	Contract
	12.00	6.00	9.05	Mill	Current
Special Papers:	10.00	4.20	6.48	Mill	Contract
	13.00	6.00	9.00	Mill	Current

Under special papers are included all papers not classified as No. 2 White Hanging Paper. In some instances the low price may be even less than for No. 2 White Hanging in view of the fact that some of the paper thus classified may be of a cheaper grade than No. 2.

The stocks of hanging paper in the paper mills decreased 176 tons during May 1920. The stocks of hanging paper held by the wall paper concerns increased 7,912 tons, and the special papers held by the wall paper concerns increased 580 tons. Stocks of finished wall paper held by wall paper concerns decreased 2,159 tons. The total stocks of hanging paper, special papers and finished wall paper reported by the paper mills and the wall paper concerns on May 31 amounted to 19,001 tons. In addition to these stocks 1,350 tons of hanging and special papers were reported in transit. Federal Trade Commission.

### TIMBER ESTIMATING HOUSE OPENS WASHINGTON OFFICE.

Mr. James W. Sewall of Old Town, Maine, has made arrangements to open an office for the conduct of timber estimating and mapping work throughout the Southern and Central states. The well known Lumberman's Bureau, Munsey Building, Washington, D.C. will act as Mr. Sewall's representative for that territory.

This expansion has become necessary because of the continued increased demands for reliable work such as the Sewall organization accomplishes, and so that Southern and Central clients can get as good quick service as the Northern ones. Mr. Sewall will be in active personal touch with both offices.

# PULP AND PAPER NEWS



To manufacture, export and deal in paper, pulp and pulpwood and all ingredients used in the manufacture of paper, H. G. Craig & Company, Limited, have been granted a charter by the Dominion Government. The headquarters of the company will be at Montreal, and the capital stock is fixed at \$5,000. Montreal lawyers are named as the incorporators.

For the purpose of taking over the business of R. S. Hooper, publisher of Ottawa, the Photogelatine Engraving Company, Limited, has been organized, and has been granted a charter, the capital stock being \$50,000. Among the incorporators are R. S. Hooper, publisher; A. W. Barker, printer; A. E. Corrigan, insurance manager, all of Ottawa.

The Ontario Engraving Company, Limited, has been formed at Hamilton and has secured a charter authorizing them to engage in engraving and publishing with a capital stock of \$40,000. Among the incorporators are: C. R. McCullough and G. H. Curtiss, manufacturers, and W. C. Thompson, commercial traveller, of Hamilton.

The Fraser Company, Ltd., of Chatham, N.B., which recently secured the plant formerly owned by the Dominion Pulp Co. of New Brunswick, is making a number of changes, which, when completed, will put the plant in first class condition and will slightly increase the production. The changes include alterations in the boiler house, remodelling of the wood room and the installation of two additional American barking drums which have been bought within the past two weeks.

The Toronto office of the Canadian Barking Drum Co., reports the following sales through their Toronto and Chicago offices: The Hineckley Fibre Co., of Hineckley, N.Y.; A. E. Reid & Co., Bishop Falls, Newfoundland; Spanish River Pulp and Paper Mills, Ltd., Sturgeon Falls; Groveton Paper Co., Groveton, N.H.; Northern Paper Mills, Green Bay, Wis.; and two drums to the Fraser Co., Ltd., Chatham, N.B.

The Kennedy Carliner and Bag Company, Limited, an American firm which is establishing its manufacturing headquarters for Canada in Woodstock, Ont., is about ready to commence operations. The company has purchased the plant of William Stone, Limited, which has been undergoing extensive repairs. Linings and coverings for grain cars, paper bags, etc., will be manufactured.

Dropping from the skies into an unknown lake and wandering for five days in the woods about forty miles north of Webbwood, was the experience of the pilot and mechanic who were flying the new hydro-aeroplane being used by the Spanish River Pulp and Paper Mills, Ltd. The fliers ran out of gas, and had to land in an unknown region where they spent five days endeavoring to find their way back to civilization. They finally arrived at Sault Ste. Marie, little the worse for their experience.

Mr. John Mather, formerly sales manager of the Wayagamaek Paper Co., and latterly with the Can-

adian Export Company at Montreal, has reached Vancouver, and taken over the management of sales of Pulp and Paper Co., Ltd.

A visitor to Toronto this week was Mr. J. J. G. Kerry, President of the Canada Paper Box Company, Limited, which has taken the place of the Canada Box Board Company, Ltd., and which has just been granted a federal charter, with an authorized capital of \$5,000,000. Mr. Kerry stated that the head office of the company would be located in Toronto, but that nothing definite had as yet been arranged as to the location of the new box board mill to be erected either at Toronto or Frankfort. The company is putting up a ground wood plant at Frankfort, which, it is expected will be in operation in September. The building will be of concrete and will be equipped with four grinders and four wet machines. It is proposed to take out the small pulpwood plant at Frankfort and another machine will be added there, which will increase the capacity to 60 tons of box board. At the company's three plants the output is now 100 tons of box board. Further prospective expansion is being provided for in Montreal, where the company has purchased the McDougall property, adjoining the mill in that city. Mr. David F. Robertson, formerly of the Campbellford mill of the Northumberland Paper and Electric Co. is the general manager of the company.

The Fred. W. Halls Co., Ltd., paper dealers, Toronto, have purchased the Toronto Hat Company's building at 257 Adelaide Street, West for \$80,000, which will be used by the purchasers as a warehouse. Mr. Alex. Buntin, of Buntin Reid Company, Ltd., Toronto, has gone on a month's holiday trip to Murray Bay.

Mr. F. L. Ratchiffe, head of the Ratchiffe Paper Co., Ltd., has returned from a 2500-mile motor trip through the White Mountains, which trip he took following his attendance at the Rotary Convention at Atlantic City.

Mr. P. L. Colbert, manager of the Valleyfield Cated Paper Co., spent a few days in Toronto this week.

Lieut. Loren L. Brown, the newly appointed B.C. Lumber Commissioner for the East, has arrived in Toronto, and has opened an office at No. 1 Adelaide Street, East. Mr. Brown reports the outlook for the expansion of the pulp and paper industry in the West as being very bright.

Mr. George Erskine, Toronto representative of the George H. Mead Co., Dayton, Ohio, was in Montreal this week attending a meeting of the board section of the Canadian Pulp and Paper Association.

Mr. Charles H. Green of the Osborne Engineering Co., of Cleveland, was in Toronto this week enquiring into the prospects of opening an office in Toronto as a branch of his firm. A thorough investigation was made of the building prospects of the pulp plants in Ontario.

Some people, knowing themselves at fault, still make frantic efforts to shift the blame on others.

### PROVINCIAL PAPER BUYS UP PORT ARTHUR.

Toronto July 11.—Port Arthur will be the scene of important developments in paper manufacture when the plans are completed of the Provincial Paper Mills, Limited, who have just acquired ownership of the Port Arthur Pulp and Paper Co., of which they had control for some time previously.

About \$1,500,000 is involved in the transfer, and it is intended to expend about \$2,500,000 in the erection of a paper mill. Preliminary work has been in progress for the past six months, but delay in the delivery of machinery, owing to the overcrowded condition of paper machinery factories, has made definite plans for completion impossible.

The plant, which occupies 140 acres in the city of Port Arthur, has turned out about \$2,000,000 of sulphite annually, which has been sold in the United States, chiefly in Wisconsin and Minnesota.

It is now intended to complete the product into paper on this side, with a mill to turn out 40 tons a day. Later in the present year it is likely the Provincial Paper Mills will do some financing for the new plant, probably in the way of a bond issue, secured by the company's four properties, the other mills being at Georgetown, Thorold and Mille Roches.

### MANUFACTURING COTTON HULL PULP.

Actual production has been started by the Stamscoett company, incorporated, at Hopewell, Va., manufacturers of paper pulp from second grade cotton and fibre from cotton hulls, obtained from oil mills.

Three large cotton oil companies are interested in the new project, and the source of raw material will be derived from oil mills, principally in the southeast.

J. W. Stull, president of the company, stated that production now is small, but that the company hopes in a short time to produce about 300 tons of the material daily, or about 2,500 car loads monthly, if the demands for the product warrant such an output.

The concern is now capitalized for \$15,000, but they will shortly increase their capital to several millions of dollars. The plant, when it is completed, will embrace 101 acres in what is known as "B" operating area of the DuPont plant, and will have about 40 buildings.

About 1,000 men will be employed by the company, when it is producing as is hoped for, both white and colored. There will be three large digester buildings, and the powerplant will produce about 10,000 boiler horsepower. Various kinds of pulp will be made to be manufactured into several kinds of paper.

Besides Mr. Stull, other officers of the company are George W. Haskell, Vice president, and L. E. Palmer, secretary and treasurer.

### PULPWOOD \$12 CORD.

Regina, Sask., July 6.—An offer for pulp wood at a price of \$12 per cord took care, Fort Frances, has been received by the Bureau of Labor and Industries. An inquiry will now be instituted as to the freight rates, points of shipment and other features with a view to finding a market, if possible, for the great quantities of O.S. wood being cleared from the settlers' holdings in the northern part of the Province. At present this wood is being destroyed and a market would prove a source of revenue for settlers during the years the land is being cleared and before a crop can be secured.

### SODIUM SULPHATE IN SASKATCHEWAN.

A lake of solid glauber salts, which is one mile long and 1,000 yards across, and estimated to contain 2,000,000 tons of sodium sulphate has been discovered near Fusilier, Saskatchewan. A syndicate has been formed under the name of Soda Deposits, Ltd., for the purpose of exploiting this lake. There is a great demand for this mineral in the pulp manufacturing industry and there is no doubt of a ready market.

### HIGHER STUMPAGE RATE IN N. B.

Frederickton, N. B., July 7.—On or before August 1st next, the stumpage rates for the following year for lumber cut upon the crown lands of New Brunswick must be fixed. Premier Foster this afternoon said he was not certain whether the stumpage question would be settled by the Government this week or would have to stand over until a special meeting. He said, however, that it was on the order paper. During the last session of the Legislature, it was intimated that an advance from \$3.50, the present figure per thousand on spruce, up to \$5 at least might be anticipated. It was also stated this morning that the Hydro-Electric Commission to carry on the development of the water powers of New Brunswick would be appointed during this meeting of the Cabinet.

### FLEISHACKERS NOT BUYING WHALEN'S.

A special communication from the Vancouver office of the Pulp & Paper Magazine quotes a telegram from Wm. Pierce Johnson, president of the Crown-Williamette Paper Co., regarding an article recently published by the Vancouver "Sun." Mr. Johnson states emphatically that neither he, Mortimer Fleishaeker, Herbert Fleishaeker nor the Crown-Williamette Paper Co. own or hold any interest whatever in the Whalen Company or properties, and do not contemplate doing so.

Possibly someone else connected with the California company bought some Whalen stock and this may have formed the basis of the story in the "Sun."

J. F. Ellis, president of the Barber-Ellis Company, Toronto, and former president of the Canadian Paper Trade Association, who was one of the founders and until recently treasurer of the Canadian Manufacturers Association, which held its recent annual convention in Vancouver, has been signally honored by being elected a life member of the C.M.A.

Two of the employees of the Brompton Pulp and Paper Company at the Bromptonville plant, M. M. Gungras and M. F. Sinnott, were injured by being struck on the head. They were taken to the hospital at Sherbrooke.

During his stay in Eastern Canada, Mr. A. E. Bryan, Trade Commissioner to Japan, visited Bathurst, N.B. and made a careful inspection of the pulp and paper mill.

The consolidation is announced of Westinghouse, Church, Kerr & Co., Inc., and Dwight P. Robinson & Co., Inc., under the name of Dwight P. Robinson and Company, incorporated, engineers and constructors, with general offices at 125 East 46th Street, and downtown office at 61 Broadway, New York. The firm has branch offices in Chicago, Cleveland, Pittsburgh and Dallas.





# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, July 17.—The Canadian pulp and paper industry continues to expand in consonance with the general prosperity of the trade and rising securities on the stock markets. The latest pulp proposition about to take form is a good-sized mill to be erected by the Spruce Falls Pulp & Paper Co. (re-incorporated), of Bradford, Pa., at Kapuskasing, the scene of the former settlement for soldiers, and around which there has raged so much discussion in Ontario Government and returned soldier circles. Details of the proposition have not yet been announced, but Premier Drury stated this week, following the visit to him of a deputation that waited on him, that the mill to be established would be larger than was originally expected and that the Government would make a detailed statement as soon as arrangements are completed. This proposition, together with several that are under way for the Port Arthur district, the proposed straw paper mill in Saskatchewan and the proposed pulp mill at Kenora indicate that the middle west is about to undergo somewhat of a boom in pulp manufacture, which should ultimately have its effect upon the Canadian end of the industry. Whether these and similar propositions in the east, will be ready in time to share in the general prosperity that is marking the industry in Canada, is a matter for speculation, but the numerous pulp and paper enterprises that are being floated would indicate considerable faith in the permanency of the trade and its probable continued prosperity.

### Pulp and Paper.

The scarcity of both chemical and mechanical pulp, the shortage of coal supplies and the high prices the mills have to pay for ingredients are reflected in still higher prices for some lines of paper which went into effect this week as noted below. The experience of one big mill, however, is that coal can be had, but at a very high figure, several cars having been offered during the week. Most mills, however, are experiencing difficulty in getting their supplies, and very few of the pulp mills have any of their product for anyone outside of their regular contract customers. Canadian mills can get the benefit of the high rate of exchange on Canadian money and when quotations for pulp sales are made they are in American funds, although some mills are making the practice of splitting the fifteen per cent exchange with their customers. Sales of groundwood pulp have been made this week at \$145 a ton, plus American exchange, which means that the commodity is selling at from \$150 to \$165 a ton. News-grade sulphite is selling at \$175 and bleached sulphite contracts are being made at from \$190 to \$200 in American funds. Sheet news is selling for as high as 14c in the open market and the representative of one big producer said that while they had made no contracts for sheets, the contract price, when arranged by them and their customers would be from 7½c to 10c a pound. News rolls are being delivered under contract at prices up to 6c a

pound. Kraft pulp is selling at from \$110 to \$160 a ton, and bleaching powder is being paid for by the pulp mills at the rate of 6c a pound.

### Book Papers.

Generally speaking, the market for book papers remains firm with a slight falling off in the demand, but not enough to allow the mills to get caught up with their orders. Jobbers are still experiencing difficulty in getting adequate supplies and stocks are very low, with indications of higher prices to come. Prices quoted by the most conservative mills are only a partial guide to what is being paid by some houses. One mill, which claims to be selling cheaper than most of the manufacturers, quotes No. 1 S.C. book at 16c; No. 2 at 15c and No. 3 at 14½c, with half a cent less for machine finish. No. 1 coated is selling at 17c and No. 2 at 16c with colored at 18c a pound. Sulphite bonds are quoted at 17½c, while the cheapest writing papers bring 15c per pound. Canadian dealers in imported American cover papers were notified this week of a withdrawal of all price lists by United States paper houses and invoices being received now show a substantial increase in prices over those prevailing in the past few weeks. These prices apply to the higher grades of cover stock which are brought in from across the border. Imported board stock also shows a slight advance and it seems to be the consensus of opinion among the dealers in book papers that lines for which they are paying 16c a pound now, will cost 20c within about a month's time, an increase that is liable to come owing to the high prices prevailing for pulp and other ingredients and increased cost of manufacturing generally.

### Kraft Paper.

The situation in regard to kraft paper has not eased up any and the big demand for the product keeps up, with last week's quotation unchanged. The difficulty in getting supplies of this grade is not ascribed so much to the shortage of raw material which characterizes other lines, as to lessened production in other countries and the greater use of kraft which is far more widely used than formerly. There has also been a widespread and successful effort to educate the consuming public to the value of kraft, which, although higher in price, is really cheaper as a wrapping paper by reason of its strength and durability. There is a tremendous demand for this variety of paper and the Wayagamack people, who turn out this line alone, say that they are booked for a considerable period ahead. The price for kraft paper remains at 12c with 12½c for No. 1 manila.

### Paper Bags.

Paper bags underwent another advance this week, the old gross price list having been advanced about fifty per cent and with the following discounts prevailing under the new list: Manila 35, 10 and 5 per cent; kraft, 50 and 5 per cent, and white confectionery, 20, and 20 per cent. The new discounts represent an advance of about twenty-five per cent on the prices immediately preceding and are for carload shipments.

### Wrapping Papers.

Wrapping paper prices remain unchanged and supplies are hard to get and the jobber who lands a carload even occasionally considers himself lucky. Several of the firms are refusing to book any more orders and one jobber said that it would require receipts of four cents a week for some time to come in order to get caught up with arrearages of orders.

### Toilet Papers.

The week saw another advance in toilet papers, the old list price being boosted by about fifty per cent. The discount is advanced to fifteen per cent off the list price from thirty-three and a third per cent, the price being about the same. The discounts on carload lots now run 33 1/3, 20 and 10 per cent, the former discounts being 15, 20 and 10 per cent. There is a big demand for all classes of toilets and tissues and both commodities are hard to get. Manufacturers are experiencing great difficulty in getting raw materials, and the cost of manufacture continues to rise. The increased output by the Interlake Tissue Mills, Ltd., which has put up a new mill and is installing a new machine, has not yet commenced, but another month or six weeks should see the new equipment in operation.

### Rag and Paper Stocks.

Rag and paper stock dealers report a slight falling off in the demand, especially in news and mixed papers, although the prices have been affected but little as yet—probably not more than one to two dollars a ton. Roofing stock is considerably easier, and there is not the keen demand for it as formerly, although it is reported that some of the mills are quietly buying considerable quantities. Some of it has been bought for 31¢ a pound, but dealers are reported to be getting a slightly lower price than that at the present time.

### NEW YORK MARKETS.

The railroad tie-up, which at first, was thought to be a temporary affair, now assumes ominous proportions. Since the beginning of the difficult movement of freight, quite a time has elapsed and no perceptible improvement has made itself manifest. While, from some quarters, a slight betterment of the situation is reported, most people in the trade continue to complain about the absolutely inadequate transportation facilities locally. It appears that freight is coming through from distant points and that longer hauls are a little better than they were. Though our bargoes have been lifted in many cases local hauls are still unsatisfactory. There continues to be a deplorable shortage of box cars, and paper mills find it difficult to get raw materials for manufacture, as well as to ship their finished product.

It is hinted that, due to the coal shortage, many mills are falling behind in fuel supplies, and that if this situation keeps up some of them may, temporarily have to cease operations.

Throughout the market paper prices generally display a firm tone, with the exception of roofing rags, for which practically no demand exists; in fact no one seems to want them, which consequently has caused them to decline in value. Expectations for a good business, however, for the fall season are expressed on all sides.

Business on spot newsprint is very quiet and the market is reported to be in a weak state. As a general

rule the small out of town publishers continue to refrain from buying in the open market. They believe that prices will recede to the extent of three or four cents a pound and express their faith in this belief by not making any purchase, except for immediate needs.

In view of the car shortage, scarcity of raw materials etc., jobbers, however, do not see how a decline in the price of newsprint is possible. Large quantities of spot supplies are not obtainable for the main reason that apathy on the part of buyers has caused the jobbers to pursue a cautious policy, rather than to accumulate large stocks which do not seem to move so readily.

Sheet news continues active. A good demand prevails, and prices are quoted about 13.50 to 14 cents. The larger mills are backed up with orders on contract and are making every effort to fill them and to get the paper to the consumers.

The fine paper market remains firm. Jobbers seem to place orders for immediate requirements at prevailing prices without much hesitation, but they do not display alacrity in making purchases for stock accumulation. The usual shipping drawback greatly hinder such a course even if it were contemplated.

Newspapers and magazines consume so much pulp that it is difficult to obtain large tonnages for fine papers and this has helped to maintain their price.

Conditions in the book paper market are about the same. The demand appears to be larger this week than ever and the supply is insufficient to meet the present requirements. The supplies of the local jobber are short and the market is too active to allow any great accumulation. A firm tone is shown in this market with no price changes reported.

Tissue prices have not changed during the interval. The market remains firm. From some quarters it is said that most offerings are taken up, while a fair demand is reported. Jobbers' stocks are said to be low, although most of their purchasing is made against immediate requirements. A slight let-up is expected in August, but optimistic views are expressed for a good fall business.

The demand for paper boards continues good while the supply in the local market does not seem sufficient for requirements. Freight congestion and poor coal shipments are serious drawbacks to business in this field. The price of binders' board has eased off during the past week, but otherwise the market shows a firm tone.

Practically no increased tendency to speculate exists in the coarse paper market, even though it displays a decided firmness. The demand seems brisk for local supplies, which are low. Big buyers hesitate to commit themselves very far ahead, although the general tone of the market indicates higher prices. A very good fall business is anticipated, however, in most quarters.

GROUND WOOD.—A scarcity of spot ground wood is generally reported and when immediate goods are offered rather high prices are asked. Very high prices such as \$110 to \$150 for dry pulp are the exception and not the rule. When a mill needs ground wood these prices may be paid, but quotations around \$130 to \$140 are regarded as nearer acceptable by consumers when they are making regular purchases. The supply of this kind of pulp is curtailed somewhat in the United States due to the fact that the dry season now prevails, and many mills that were turning out large



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quantities are forced to close down for a time, while the users of this output are forced to go elsewhere for their requirements.

**CHEMICAL PULP**—The chemical pulp market remains very firm, and in some quarters, higher prices are said to be coming. Some mills are experiencing great difficulty in getting sufficient amounts of coal, which might necessitate a temporary shut-down if this situation fails to ease up shortly.

Kraft has eased up slightly, for it seems that most mills have quantities on hand to last them for a while, and have even turned down offerings around 7 cents. **BLEACHED SULPHITE**—Bleached sulphite is extremely difficult to obtain, and while some small lots are available at high prices, it is said that large tonnages for spot goods could easily be sold for several cents above the quoted prices. Very large quantities of foreign pulp are not being imported, while most of the stuff coming over seems to be against contracts. As a big buying factor in the Scandinavian market, England looms up very large.

**OLD RAGS**—A period of dullness is reported in the rag market. Most buyers display positive indifference to offerings. The yards of many plants are filled with carloads of this material which come at one time, is the general explanation for this plate of affairs. At the request of some consuming mills, the dealers are even holding up further shipments bought some time ago. For roofing rags, buyers cannot be found. In a short time, it is thought prices will be firmer. Abroad, rags continue firm, but in the domestic market, trading is rather slow.

**OLD ROPE**—The market continues very inactive. Offers are comparatively scarce, and prices are rather weak.

**WASTE PAPER**—Most grades of waste paper are in fair demand. Due to a weakness in mixed papers, prices have eased off, but otherwise quotations remain firm.

**TWINES**—Twine enjoys a good demand, while the supply is said to be short. The jute crop gives indications of being short again this year, so no immediate relief is expected. Firm prices continue.

#### KELLOGG WENT WEST.

R. S. Kellogg, secretary of the Newsprint Service Bureau is out on the Pacific coast visiting newsprint mills in the coast states and British Columbia. Here's hoping he has as good a time as the editor did. He can't do better. Mr. Kellogg expects to return the middle of August.

#### WILL ALSO MAKE HYDRAULIC MACHINERY.

About four months ago the Dominion Bridge Company, Limited, announced the organization of their subsidiary Company to take over the manufacture of paper making machinery. This Company was to be known as the Dominion Engineering and Machinery Company, Limited. An investigation of the possibilities of the new plant has revealed the admirable position it is in to manufacture hydraulic as well as paper machinery. With this extension of output in view, the Dominion Engineering and Machinery Company has been re-organized and from now on will be known as the Dominion Engineering Works, Limited.

Arrangements have been made by the new Company with the William Cramp & Sons Ship and Engine Building Company, of Philadelphia, (the I. P. Morris Department) for the exclusive use in Canada and the British Empire of its designs for water turbines and other hydraulic machinery. New equipment has been purchased and is being installed in the shops at Lachine, Quebec, which will make possible the manufacture of the largest turbines and paper machines.

The various paper mill specialties formerly made by the Paper Machinery Department of the Dominion Bridge Company, Limited, and by the Dominion Engineering & Machinery Company, Limited, will henceforth be manufactured by Dominion Engineering Works, Limited.

#### PAPER GOES FAST BY CANAL.

Albany, N. Y.—Two cargoes of newsprint reached New York last week from Three Rivers, Que., making the state canal journey of 452 miles in less than six days. Under ordinary conditions the shipment would take from seven to nine days by rail, but with the present traffic congestion, a transit period of six weeks might be expected.

#### WOODWARD SAYS PULP WOOD MENACES NAVIGATION.

C. C. Woodward, American consul at Campbellton, N.B., has sent a report to the Department of Commerce stating that drifting pulp wood in the St. Lawrence River and gulf has become a menace to navigation. The location is near Flat Point on the northern coast of Nova Scotia and well inside the gulf.

It is reported that owing to the breaking of booms at Murray, C.B., pulp wood valued at half a million dollars was swept out to sea from the North River, and it is presumed to be the pulp wood reported drifting in the mouth of the St. Lawrence.

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**ROUMANIAN PAPER REQUIREMENTS.**

(Note.—The following group of trade inquiries emanate from the chief paper users of Roumania. This kingdom is turning to Canada in search of new buying markets to replace her former European sources of supply, and a complete re-stock must take place before her paper-using industries can resume their peace-status. A considerable series of articles upon Roumanian trade prospects is appearing in the "Weekly Bulletin," from L. D. Wilgress, Canadian Trade Commissioner at Bucharest.)

1265. **Paper.**—A newspaper in Roumania desires to receive samples and quotations from Canadian firms in a position to export newsprint paper.

1266. **Paper.**—A newspaper in Roumania desires to receive samples and quotations from Canadian firms in a position to export newsprint paper.

1267. **Paper.**—A newspaper in Roumania desires to receive samples and quotations from Canadian firms in a position to export newsprint paper as well as any other kind of book paper.

1268. **Paper.**—A book printing firm in Roumania desire to receive samples and quotations from Canadian firms in a position to export newsprint as well as any kind of cheap and fine paper.

1269. **Paper.**—A printing firm in Roumania desire to receive samples and quotations from Canadian firms in a position to export all kinds of paper in general.

1270. **Paper.**—A printing firm in Roumania desire to receive samples and quotations from Canadian firms in a position to export all kinds of paper.

1271. **Paper.**—A firm in Roumania for sale of books and stationery in general desire to receive samples and quotations from Canadian firms in a position to export all kinds of paper.

1272. **Paper.**—A firm in Roumania for printing and sale of books and stationery in general desire to receive samples and quotations from Canadian firms in a position to export all kinds of paper.

1273. **Paper.**—A firm in Roumania desire to receive quotations and other particulars from Canadian firms in a position to export all kinds of paper in general.

Mr. Marshall, the new manager of the Pulp and Chemical Department of Messrs. Ralph, Darwen & Pearce, of London, has now returned from his business journey to Scandinavia. As the result of an agreement arrived at with a prominent Swedish firm controlling several pulp mills, Messrs. Ralph, Darwen & Pearce will in future be in a favorable position to supply various brands of pulp.

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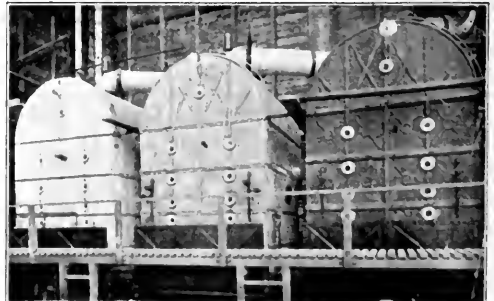
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## OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

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### TABLE OF CONTENTS

#### Editorial:

Distinguished visitors . . . . .	797
Time he quit . . . . .	797
The Judge comes back . . . . .	798
All our own . . . . .	798
Who did it? . . . . .	798

#### Special Articles:

Increased production through correct lubrication . . . . .	799
The coal situation . . . . .	803
A brief review of foreign trade conditions	805
Canada's exports of pulp and paper . . . . .	807
Technical Section . . . . .	813
(New members; outline of section of sulphite pulp; recent patents)	

#### Miscellaneous Information:

New steamship line for South America . .	801
Veteran explorer praises airplane . . . . .	802
Ellwood Wilson will address conference . .	804
Installed laundry equipment . . . . .	804
Salvaging pulpwood from Lake Superior . .	806
Fire prevention on block pile . . . . .	811
Fort William Co.'s timber limits . . . . .	811

Add forest engineer to staff . . . . .	812
Will make re-made pulp . . . . .	812
How railway operating costs mount . . . . .	812

#### News of the Industry:

Pulp and Paper Association welcomes Empire's Fourth Estate . . . . .	801
Federal Trade Commission's newsprint report . . . . .	802
Laurentide's new grinder unit on way . . . . .	802
Seamen leaving F.P.L. for India . . . . .	804
Belgo's new shipping shed . . . . .	804
Riordon's to harness the Gatineau . . . . .	806
Whalen Pulp Co.'s successful year . . . . .	806
Paper products made in Canada . . . . .	810
Pulp and paper in Newfoundland . . . . .	811
Flax straw pulp mill projected . . . . .	811
United States Notes . . . . .	811
Pulp and paper news . . . . .	815
Not a Spanish River Subsidiary . . . . .	816
Northcliffe papers absorbent . . . . .	816
Trade Inquiries . . . . .	822

#### The Markets:

Canadian trade conditions . . . . .	817
New York Markets . . . . .	818

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# EDITORIAL



## *DISTINGUISHED VISITORS.*

Canada is honored just now by the presence of many delegates to the Imperial Press Association. They are all welcome and we wish there were more. By a curious coincidence, the Imperial Forestry Conference was held this month in London—the growers of pulpwood in England and the users of paper in Canada! Scripture says the eye is not filled with seeing, but there will be some saturated retinas if our honored guests see all they look at in Canada.

The Pulp and Paper Magazine is particularly glad that the journalists of the Empire have chosen the Dominion for their meeting place. Some of them will some day want Canadian paper and they will now have a chance to meet a number of paper makers in a way that will bring friendship before business connections. Surely an ideal beginning.

We wish them all fair weather and a happy and profitable visit and conference.

## *TIME HE QUIT.*

It seems that there is in the United States a propaganda of deliberate misrepresentation of facts regarding the relation of the publishers of that country and the forests of Canada. Speeches and newspaper articles, even contributions to the English press, endeavor to create the impression that the purpose and effect of the terms of lease of Crown timber lands is to starve the American paper mill, kill the pulp industry and eventually make the American publisher eat out of Jack Canuek's hand. The gentleman responsible for most of this misinformation is still talking, spreading dissension and stirring up ill feeling between two countries who have been at peace for a hundred and six years. It is time he quit. We are convinced that his premise is false and his deductions are inaccurate.

How can anyone dare to state that the restriction on the use of Crown land wood is the cause of paper shortage in the United States when the Federal Trade Commission finds American mills consistently producing from 15 to 20 per cent. more paper each month than the average for the past three years? It is absolutely ridiculous to say that manufacturing Crown land wood into pulp or paper before it is exported has the slightest influence on the amount of paper available to the American publisher. The intelligent, independent thinking, see-for-yourself publishers know this and are not to be fooled into any

delusion that they will get more or cheaper paper by shouting for the provinces to let down the bars. They know that every mill is pulling out its deckles and pushing up its speed—and in most cases, its quality also—and that when the demand is less and the costs of production are less, there will be more and cheaper paper.

This ranting is not reliable, but it must be taken seriously. It starts with some true statements and then twists or mis-applies the meaning. It quotes Canadian foresters as to what could be produced by proper methods when the ranter knows well that only the smallest beginning of elementary forestry is practised here. This, of course, is done in the interest of a paper company, not of the publishers. That they would not fare any better if all wood went freely to the States is indicated by the fact that Canadian prices have been consistently less than American, as shown by reports of the Federal Trade Commission. Perhaps, where real forestry methods are in force, and the annual growth (net) will warrant it, a change in regulations may be made.

American mills now get annually from Canada about one sixth of the pulpwood consumed, besides the thousands of tons of pulp which they convert. A considerable amount of the wood imported is poplar, which can be grown in a few years almost in the back yard of the mill, since every state has great areas of waste land suitable for forest growth only.

It is quite useless to point out what might be done on the other side. It is hard enough to get things started on this side, but they **are** started. The great fact is, that the American publisher has never been short of a reasonable supply of paper and the forest policy of the eastern provinces is not a danger to him nor to the American paper mill. We venture to predict that this very policy, which is now so thoroughly berated across the line, will one day prove the salvation of the press and paper industry alike on this continent. To make such an outcome most effective and beneficial, we need the co-operation and mutual understanding which is now the plea of President Sisson of the American Pulp and Paper Association. Canadian paper makers don't want to tell their neighbors "where to get off," but to show them how to get on.

The steady and healthy growth of the Technical Section is evidence of the ever increasing appreciation of the value of co-operation and of the place of the technical men in the industry.

*THE JUDGE COMES BACK.*

Some time ago we missed "C.F.M."—not Canadian Fairbanks-Morse, but Judge Charles F. Moore—from the editorial pages of Paper. But our good friend and occasional opponent, editorially, has come back, and "C.F.M." is reincarnate (or something like that) in the columns of the United States Paper Maker as contributing editor. Welcome home, Judge!

Among the remarks he makes in commenting on the candidates for the Presidency of the United States, Judge Moore makes the following statement which can well be taken to heart by every reader of the Pulp and Paper Magazine:

"To my mind there is entirely too much talk about rights and privileges. Labor is demanding its right, and capital asserts its privileges with no less vehemence. Men are so busy exercising privileges and clamoring for rights that they have little time to commune with duties and obligations; yet it is the observance of the latter to which we must look for our continued well-being. This country is preserved not as much by the men who make our laws as it is by the men who keep them. Four years hence, I still believe, the United States will be the best country in the world, no matter whether the next President is Harding or Cox. Neither one of them is big enough to save the country, if the people determine to go wrong; nor big enough to destroy it, if the people stand for the right.

If I am right in this view, there is no need to waste the summer dreading the future and begging for votes. Every man should have his political conviction and should not hesitate to express it at the polls and elsewhere; but the best way to support the constitution, and the family, is to keep on doing an honest day's work every twenty-four hours. There is little to be gained discussing politics on the street corner or in the barber shop."

*ALL OUR OWN.*

In talking with a reader of the Pulp and Paper Magazine the other day, he referred to a certain editorial and told me the editor; he could tell me who wrote it. It was evident he thought it had been contributed, and was very confident as to the author. The man he mentioned had not even furnished me an *clen*. I told him the story of the editorial and he gave me some interesting information.

The point here is, that some other readers may be under the misapprehension that editorials are occasionally contributed. There have been, perhaps half a dozen in the last three and a half years, outside of those written by Mr. Ross during my western trip two years ago. All of them, I believe were duly credited.

Let it be understood, then, that, unless they be indicated as contributions, the editorial pages are the work of the editor, and whether or not they have merit, they are written with the purpose of encouraging righteousness and progress.

The United States exported 180 tons of newsprint to Canada during May 1920. My goodness!

*WHO DID IT?*

There is such a thing as being too accommodating. For instance, we loaned the 1913 bound volume of the Pulp and Paper Magazine to a friend in need and he hasn't returned it. Please, Mr. Friend, come across with that book. Some one else wants some information from it.

*THE BABY.*

The editor's friends frequently ask how the baby is getting on. Well, he was a year old on Monday, is 30 inches tall or long (that is approximate, as he wriggles), weighs 20½ pounds and is happy all the time. We didn't dare print his picture again (see Dec. 25, 1919) for fear of arousing too much jealousy. His favorite plaything is a piece of paper!

*COBWEBS.*

We had a very interesting visit the other day at the Dominion Engineering Works. There will be more about it soon.

We have just had another good laugh at the blotters sent out by Canadian Steel Foundries, Ltd., giving the "bear" facts of the business of getting good castings.

That is a beautiful picture of Niagara Falls, on the cover of "The Beater" for July, in which the Valley Iron Works describe their new Niagara beater. We are very sorry to learn, from the same issue, that Mr. A. I. Peterson, vice-president of the company has died.

We noticed a picture in the Literary Digest of Governor Cox's house. It this is in any way typical of the poverty of American publishers, there is little for them to complain of.

Read the letter on another page which Secretary Baker has sent to members of the American Pulp and Paper Association on The Coal Situation. It applies also to Canada.

The Canadian Forestry Journal published the statement that dry weather is a prominent cause of forest fires. That is not so. It is merely a condition that aids the starting and spreading of the fire. You can't have a fire without a light. The real cause of the fire is the agent that brings a spark to inflammable material. The agent is usually a human being and is a criminal who should be severely punished.

*NEW THEORY OF COLOR.*

In Ireland a mixture of green and orange makes black and blue. —Greenville (S.C.) Piedmont.

# Increased Production Through Correct Lubrication

By A. H. Pritchard.

Lubrication of paper mills is a factor in their operation that is seldom given the consideration it should have. When it is brought to the attention of mill owners and superintendents, they are inclined to regard it as being of minor importance. The reason for this is that the item—cost of lubricants—is a small figure when compared with the cost of raw material, labor, maintenance and coal. Yet the quality of lubricants and their method of application have a large influence on all of these large cost items. Each will be taken up later in this article, and we will show what influence correct lubrication has on each item mentioned.

Correct lubrication is necessarily based on two factors—quality and suitability of the lubricant, and the method of its application. In dealing with lubricants it is important to go back to their origin or the crude oil. Correct selection of the crude is absolutely essential if we desire to manufacture a real lubricating oil.

In addition to the correct selection of crude, correct methods of manufacture must be carried out in order to secure the very best results in terms of high quality of lubricants. During the process of manufacture, certain physical characteristics of oil are used to check up their uniformity. These are known as gravity, pour test, flash point, fire point, viscosity and color. Some purchasers of lubricating oil have endeavored to use these analyses to cover a standardization of lubricants for their use. For some time past, users of lubricants have discovered that this is not a true basis on which to base the selection of lubricating oil.

Lubrication engineers have been working on the problems of selection of lubricants for a number of years, and one of the results of their work is that they have definitely determined the fact that the correct selection of lubricants must be based on an analysis of operating conditions plus a full knowledge of the lubricant to be used. This full knowledge of the lubricant to be used should be based as heretofore stated, on the kind of crude used, the methods applied in its manufacture, and a full knowledge based on field experience with these oils in use under a group of operating conditions. Following is a table used for the selection of oil for the lubrication of steam cylinders, which has proven its worth and stood without a change for over two years.

## Gargoyle Oils for Lubricating Steam Cylinders.

Operating Conditions	Kind of Oil
(Steam under 100 lbs. press. and less is considered "wet".)	
Large stroke—over 24"	T.S.W.Q.
Small stroke—24" or less	T.S.N.V.X.
High speed—over 125 R.P.M.	T.S.W.Q.V.R.X.
Slow speed—125 R.P.M.	T.S.W.Q.V.R.X.
Load—over 75 per cent.	T.S.N.W.V.R.
Load—75 to 25 per cent.	W.Q.V.R.X.
Load—under 25 per cent.	Q.R.
Steam Press.—over 100 lbs. sq. in.	T.S.N.W.Q.V.X.
Steam Press.—100 lbs. or less	N.V.R.X.
Wet steam—under all conditions	N.W.V.R.X.
Dry steam and superheated to 600 deg. F. (Total heat)	S.Q.

Superheated steam over 600 deg. F.

T.Q.

Note:—Where operating conditions demand, a straight mineral oil of the same grade should be recommended.

T.—cylinder oil extra Decla; S.—cylinder oil 600 W; N. Valve oil; W.—Valve oil; Q.—Valve oil Navy; V, R, and X.—Cylinder oil Rarus.

The outstanding factors of stroke, speed, load, steam pressure and steam conditions are the five vital factors which must be known by the lubrication engineer before he can make a correct selection. "Stroke" is an influence in that it is a guide toward the volume or steam used per stroke. "Speed" is a factor in that it indicates how frequently a charge of steam is taken by the engine. "Load" is a factor from the standpoint of both volume and velocity flow.

An engine working on a high load will require a different oil in that the velocity of steam will better atomize an oil of certain characteristics than if this velocity is lower; with a lower velocity it is therefore necessary to recommend a different oil to meet these requirements of atomization. Atomization is positively necessary if we desire correct cylinder lubrication.

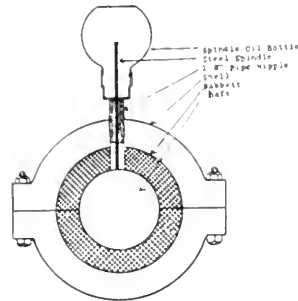


Fig. 1  
Sectional View of Bottle Oiling Device

Steam pressure is used as an indication of steam temperature only. It is obvious that steam temperature could not be used, and "steam pressure" is another way of expressing it. The quality of steam, whether wet, dry or super-heated, needs little discussion, in that a wet steam requires an oil of different characteristics from dry steam, or either of these conditions would require an oil of different characteristics than such as would be necessary to meet the super-heated steam conditions.

This table is based on the practical field experience of a large number of lubrication engineers. The factors, size, speed, load, steam pressure and quality, are the selection of these men in conference, based on world-wide experience, as well as the application of the brands of oil given to meet a group of operating conditions.

The selection of oils for lubrication of bearings has been worked out in the same way. The factors and the application of the brands of oil have been handled in just the same way as the cylinder oil problem.

**Gargoyle Bearing Oil Recommendations.**

Oiling Systems	Kind of Oil.
1. Oil bath	A. E. K.
2. Circulation (no water)	A. C. E. T.
"    "    (water)	A. J. K.
3. Splash (no water)	C. E. H. J.
"    "    (water)	A. J. K.
4. Ring oiled (except turbines)	A. C. D. E. J.
"    "    (turbines)	A. C. K.
5. Drop feed (no water)	A. B. C. E. J.
"    "    (water)	B. H. J.
6. Hand oiled	A. B. C. E.

**Bearing Factors.**

1. Size: Under 1" diameter	C. D. E.
"    "    "    "    from 1" to 3" diameter	A. B. C. D. E. H. J. K.
"    "    "    "    over 3" diameter	A. B. C. D. E. H. J. K.
2. Speed: under 50 R. P. M.	A. B. C.
"    "    "    "    from 50—300 R. P. M.	A. B. C. D. E. H. J. K.
"    "    "    "    over 300 R. P. M.	A. B. C. D. E. H. J. K.
3. Pressure—moderate	A. B. C. D. E. H. J. K.
Excess—weight, pull, thrust	A. B. C. D. E. H. J. K.
4. Temperature—moderate	A. B. C. D. E. H. J. K.
Temperature over 140 deg. F.— deficient radiation	A. B. C. D. E. H. J.
Temperature over 140 deg. F.— induced heat	A. C. H.

Note:—Correct oil is determined by the analysis of the service conditions in terms of the oiling system in use and of the four bearing factors.

A.—Steam cylinder oil; B.—No. 1 marine engine oil; C.—Extra engine oil; D.—Rochester engine oil; E.—Arctic machine oil; H.—Extra heavy D. T. E. oil; J.—Heavy D. T. E. oil; K.—D. T. E. oil.

There are six methods of application, each of which has an influence on the selection of lubricants for bearing. Size, speed, pressure and temperature are also factors which should be known by a lubrication engineer if he is to make a correct recommendation.

**Correct Application Important.**

Next in importance to the recommendation of the correct oil is the correct application of the lubricant. Many devices have been invented and are on the mar-

ket which aim to feed oil in the right amount. Those correct oil. In the case of steam cylinder oil this rate of feed is controlled by the operator, but the correct design of lubricator is operated in unison with the speed of the engine, and in the case of a variable speed engine, such as is used to drive the paper machine, the rate of feed is increased dependent on the speed of the engine.

A device well adapted to feed oil to bearings in a paper mill is shown in Fig. 1. It contains 4 ounces of oil and under ordinary operating conditions this amount of oil will last three or four weeks. This device is entirely automatic. It feeds just a certain amount of oil, and in cases of larger bearings more oilers can be applied. It does not feed when the shaft is idle. It always puts the oil where it will do its work, i. e., between the shaft and the bearing. It eliminates waste and drippage from the bearings. In the case of large bearings where many oilers are used they afford many points of distribution.



Fig. 3.

In Fig. 2 is shown a 6" shaft in a wood room. The pulley shown is the main drive from the engine. Shaft speed is 290 R. P. M. Bearings are plain, 18" long. On the bearings shown there are four oilers supplied, while on the bearing beside main drive pulley five oilers are required. Previous to the installation of these devices these bearings were oiled by hand every fifteen minutes with an ordinary grade of machine oil, requiring 60 to 70 ounces of oil per day.

A high grade oil correctly selected was used later in the devices as pictured, and 52 ounces of oil were sufficient for 26 days' run.

Fig. 3 shows other installations of these devices in a wood room. The number of oilers is determined by conditions of service. These devices have real value in themselves but the lubrication engineer must have a full knowledge of the kind of oil suitable to both bearing and the oiler. Moreover, because of the very small amount of oil fed it must necessarily be of high quality and correctly manufactured.

The real result of correct lubrication of machinery is the saving in power. Lubrication is not often associated with friction losses, yet that is our reason for applying a lubricant. If it is true that some ordinary oil will save a ton of coal, it is equally true that the same quantity of high grade oil will save more. As a practical result of suggestions based on many years' experience with high grade lubricants, it has been proved possible in many paper mills, by the use of such oils, to reduce the total expenditure of power by from 5 to 18 per cent. In a few rare cases it ran higher, showing a maximum saving of 34 per cent.

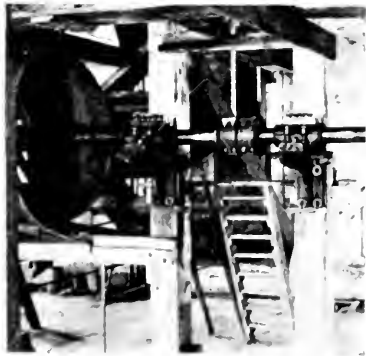


Fig. 2.

ket which aim to feed oil in the right amount. Those which eliminate the human factor or those which do not depend upon the judgment of the operator as to the amount necessary are best adapted to feed the

Following is a summary of a test which ran through a period of twenty-six days. This machine room was motor driven, and accurate hourly readings were made by the plant officials during the lapse of time with one oil in use. Another oil was installed and after two weeks' service a record of twenty-six days' run was also kept by the plant officials. In this case no change was made in the method of application, however, application being the same with both oils.

	B. Oil	A. Oil	Difference
Average K.W.H. per lb. of paper . . . .	.0512	.0434	.0078
Average production per K.W.H. in lbs. . . .	19.5	23.0	3.5
Average feet per K. W. input . . . . .	165.0	174.0	9.0
Average K.W.H. demand per hour . . . .	164.9	148.1	16.8
Average production per hour in lbs. . . .	3321.0	3413.0	192.0
Total hours of operation B Oil . . . . .	485		
Total hours of operation A. Oil . . . . .		494	
Net K.W.H. saving for test period . . . .	7,299		
Net K.W.H. saving per year . . . . .	120.9		
Net saving in power demand of . . . . .	10.2p.e.		

Many other tests have shown a greater percentage of savings than the above. Tests have also been run where the machine room is driven by a steam engine, in which case many indicator cards are taken and an average of these has shown a reduction in I.H.P. to do the same amount of work.

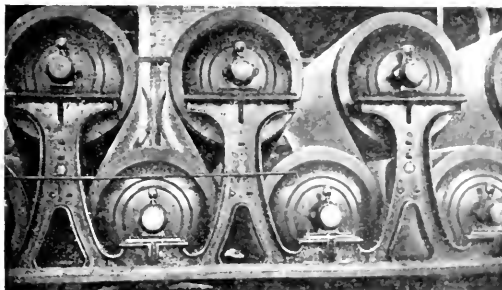


Fig. 4. Bottle oilers on paper machine dryers.

#### Reducing Broke at Calenders.

As an illustration of what correct lubrication means we can cite increased production which always follows such when put into effect on calender stacks. When stacks are hand oiled they speed up when oil is applied, thereby causing a certain amount of "broke". This is especially true on mills making news print and other light papers. Speed increase is due to better bearing lubrication which immediately follows hand application. When the correct high quality oil is applied in the proper manner the speed of the stack will be constant, thereby avoiding the large percentage of "broke" and because of greater ease in bearings, requiring less power for driving the rolls.

Earlier in this article we mentioned the fact that lubrication was linked with the larger cost items of raw material, labor, maintenance and coal. The cost of raw material is reduced in the instance of eliminating a large percentage of "broke" in the correct lubrication of stacks. While all such "broke" is returned and used again, there is some loss of raw material; however, there is surely an increase in production, which is a big item in itself.

The cost of labor is less when oiling is eliminated and automatic devices used. The entire cost of oiling cannot be eliminated but a part of the time of such labor can be applied to other departments.

With less friction in the bearings there is naturally a smaller amount of maintenance necessary, which is an additional item on labor cost. Belt cost, Babbitt cost and renewal of machinery are among the cost items that are reduced as well as labor cost.

The power saving, which follows the correct oil, rightly applied, has an effect on the saving of steam, which in turn has an effect on the amount of coal necessary to make such steam.

In this day of conservation it behooves all of us to conserve our resources from whatever angle, and correct lubrication offers us an opportunity to add to the dwindling profits of the employer. He cannot increase his selling price without a large amount of criticism, neither can he reduce his cost of labor by reduction of wages, without a considerable hazard. He can, however, make the savings mentioned in this article without any difficulty from other sources.

Note: Tables 1 and 2 are based on charts copyrighted by the Vacuum Oil Co., Ed.

#### PULP AND PAPER ASSOCIATION WELCOMES EMPIRE'S FOURTH ESTATE.

Readers of the Pulp and Paper Magazine will be interested in the radiogram received from Viscount Burnham, Chairman of Imperial Press Conference, in reply to the message sent by the Canadian Pulp and Paper Association on July 21st. The message reads: "Lord Burnham, on board steamer Victorian, en route to Halifax. The Canadian Pulp and Paper Association extends cordial greetings to Imperial Press Conference delegates en route to Canada, with best wishes for a successful meeting and mutually beneficial results from their first hand study of the Dominion."

Lord Burnham's reply is as follows:

"Canadian Pulp and Paper Association via radio from S.S. Victorian, via Cape Race. Delegates to Imperial Press Conference sincerely thank you for your cordial greetings and join with you in hoping that good results will ensue."

A later telegram has been received by the Association, extending an invitation for a short address before the Imperial Press Conference in Ottawa on the morning of August 5th, on the Pulp and Paper Situation. Mr. Dawe, Secretary of the Association, will present the address.

#### NEW STEAMSHIP LINE FOR SOUTH AMERICA.

The Pacific Motor Ships Corporation is inaugurating regular sailings from Vancouver, Seattle, and San Francisco for South America. Mr. Edmund Cunningham will be Vancouver agent. The S.S. Boolyalla will be the first ship Southbound leaving about August 1st.

## FEDERAL TRADE COMMISSION'S NEWSPRINT REPORT.

The following is a review of the reports received from domestic manufacturers of newsprint paper, from jobbers buying and selling newsprint paper and from leading publishers using newsprint paper in the United States. Import and export statistics of the Department of Commerce are also included in the review.

The average or normal production of total print and standard news based upon the total combined production for the years 1917, 1918, and 1919, amounted to 112,736 tons of total print and 101,400 tons of standard news for a period corresponding to June. The actual production amounted to 130,380 tons of total print in June 1920 and 119,061 tons of standard news, an increase in the case of total print of less than 16 per cent, over the average for the three-year period and an increase in the case of standard news of more than 17 per cent, over the average.

The increase in the production of newsprint in June 1920 over June 1919 amounted to more than 13 per cent, for total print and less than 18 per cent, for standard news.

Mill stocks of both total print and standard news increased during June, 1920.

The imports of newsprint for May 1920 were 6,209 tons more than for May 1919. The exports for May 1920 were 12,336 tons less than for May 1919.

The imports of mechanically ground wood pulp for May 1920 were 2,357 tons more than for May 1919. The exports of domestic wood pulp were 1,968 tons less than for May 1919.

The imports of Chemical Wood Pulp (total) for May 1920 were 26,090 tons, greater than for May 1919.

Stocks of rolls in the hands of jobbers at the end of June were 558 tons more than the stocks in the hands of the same jobbers at the beginning of the month. Stocks of sheets were 184 tons more at the end of June than at the beginning of the month. The net increase in the total stocks of newsprint in the hands of jobbers at the end of June amounted to 742 tons.

Commitments to sell roll news were 2,797 tons greater than commitments to buy. Commitments to sell sheets news were 1,131 tons less than commitments to buy. Total commitments to sell both rolls and sheets were 1,363 tons greater than commitments to buy.

Publishers' stock increased 17,961 tons during the month. The average daily tonnage used during June was slightly more than the average used in May.

Publishers' stocks and transit tonnage on June 30, represented slightly less than 40 days' supply at the existing rate of consumption.

Sixty nine publishing concerns held about 56 per cent of the tonnage on hand at the end of the month.

The domestic consumption of standard news, by metropolitan dailies using between one half and three-fourths of a million tons annually increased more than 2 per cent for June, 1920, over June, 1919, and more than 19 per cent for June, 1920 over June 1918.

### Loss of Production.

Reports from 91 mills operating 195 machines running full or partial time on newsprint paper showed the following loss of time during the month of June, 1920: Lack of labor, 209 hours; repairs, 915 hours; other reasons, 200 hours; lack of coal and pulp, 73 hours.

The total time the machines were idle was 576 hours less than that shown in May. No lost time due to lack of orders was reported by newsprint mills.

### Average Prices Paid by Publishers.

The weighted average price of contract deliveries from domestic mills to publishers during June, 1920, f.o.b. mill in carload lots for standard news in rolls, was \$4,752 per 100 pounds. This weighted average is based upon June deliveries of approximately 51,000 tons on contract involving a total tonnage of approximately one-half million tons of undelivered paper manufactured in the United States.

The weighted average contract price based on deliveries from Canadian mills of more than 25,000 tons of standard roll news in carload lots, f.o.b. mill in June, 1920, was \$4,550 per 100 pounds. This weighted average is based upon the June deliveries on contracts involving more than 200,000 tons of undelivered Canadian paper. The greater number of these are short-term contracts covering the year 1920.

The weighted average market price for June of standard roll news in carload lots f.o.b. mill based upon domestic purchases totaling more than 7,000 tons was \$10,072 per 100 pounds. This weighted average may be less than market quotations on account of contract relations, quantity discounts, mill stock ownership and other causes unknown to the Commission.

### VETERAN EXPLORER PRAISES AIRPLANE

The recent successful 850 miles exploration flight over the northern woods in the Laurentide hydroplane has been the basis of much comment in lumbering circles, particularly the ease and speed with which it is possible to obtain information in regard to timber that it often requires months of arduous travel on foot and by canoe to secure.

The trip was made the week before last, and Lt. Stuart Graham, the pilot, had besides his mechanic, M. Kahre, Mr. M. C. Small, chief of the logging division, C. R. Townsend, aerial photographer, and Philippe Charland, one of the explorers of the company.

A letter to Mr. Chahoon from Philippe Charland, one of the oldest and best known of the company's explorers, praises the airplane reconnaissance work very highly. It follows:

"Dear Mr. Chahoon:

"It is impossible for me to have flown over the 1,800 sq. miles I had already prospected partly on foot without telling you my impressions as to that modern method of exploration. We flew very low, from two to 3,000 feet high, and I was able to recognize all the lakes and rivers that I had already visited by canoe. We spent eight weeks of heavy work for that exploration, and our aerial flight allowed us to check all that work in less than three hours in a manner that proved to be most effective.

"May I express to you, Mr. Chahoon, my gratitude for having sent the airplane here to verify my work.  
(Signed) PHILIPPE CHARLAND."

### LAURENTIDE'S NEW GRINDER UNIT ON WAY.

The first of the new grinder units which will soon be installed in the groundwood department, as well as the motor to drive it, is expected to arrive shortly, as word has been received that it is on the way. Two additional units will be shipped in the near future, and when the three are in operating order, the potential capacity of the groundwood department will be increased to an output of about 40 tons daily.

## The Coal Situation

Under this title, Hugh P. Baker, secretary-treasurer of the American Paper and Pulp Association, sent out last week the bulletin which follows. The recent priority order which gives preference to coal trains and also places Canada in the same class as the American North-West, should greatly relieve the situation and should be appreciated by Canadians with sincere gratitude:

To the Members of the Association—

The present chaotic coal situation seems to be due to the following causes:

- 1—Unequal distribution of coal.
- 2—Inadequate transportation facilities.
- 3—Panicky attitude of people toward the coal situation.

The unequal distribution of present supplies of coal has caused a real shortage in New England and the North-West. In other sections of the country the shortage is local rather than general. That this shortage is the result of unequal distribution is evidenced by the fact that a serious effort is being made by railroad executives and bituminous coal operators to bring about concerted action in getting cars to the mines in sufficient quantities. That is, the basis of the present difficult coal situation seems to be inadequate transportation facilities rather than actual shortage in coal.

### *Production of Coal Normal.*

The production of coal for the first half of 1920 is only 0.3 of 1 per cent below the average production for the first half of each of the past 8 years. At no time during the last 7 full years have the production figures for the first 6 months equalled 50 per cent of the year's output of bituminous coal. According to the Geological Survey, the actual figures are as follows:

Year.	Tonnage 1st 6 Mos.	Per Cent.	Total Production.
1913.....	225,748	47.18	478,435
1915.....	193,175	43.64	442,622
1917.....	272,953	49.47	551,789
1919.....	213,537	46.62	458,063
1920.....	254,987	47.22	540,000

\* Estimated.

Ellery B. Gordon of the National Retail Coal Merchants' Association of Philadelphia, in a letter to your Secretary dated July 16th, says in part:

"I might say that in my opinion there is not an actual shortage of production of bituminous coal. There is a shortage as compared with the demand.

... During a period of adjustment following a strike of the miners, and during a period when the railroads were under the most difficult handicap as regards labor, prior to the really serious attempt to improve transportation of coal, and during the period which in past years has always been one of sub-normal production as compared with the last half of the year, we have gotten out practically 50 per cent of our estimated requirements."

There has been a slow but constant upward curve in the production of bituminous coal since April. There seems to be a general tendency toward improvement in car service. Production is limited only by the supply of cars. From the production standpoint there is no reason for industries to be panicky over the coal situation.

The inadequate transportation facilities, rather than lack of production, are causing serious coal conditions. There is apparently an honest effort being made toward co-operative action between railroads and mines, and there has also been pressure by the Interstate Commerce Commission. This has resulted in maximum use of coal equipment, prompt unloading and rapid utilization of new storage facilities—if the industries co-operate effectively in these three factors in the situation, there must be increased production of coal. Although manufacturers of railroad equipment have received orders for 28,000 freight cars and 600 locomotives, the delivery of this equipment cannot be made in time to relieve the present situation.

### *Export of Coal not Responsible for Shortage.*

There has been some effort to blame the present difficult coal situation onto the way in which coal has been exported. A careful analysis of this situation seems to show that the export of coal is having but little effect on the present situation, other than to increase the price. Foreign buyers and exporters are outbidding consumers in order to avoid excessive demurrage in securing cargo for their ships. This is probably a legitimate activity which in normal times would have but little influence on the regularity of the coal supply throughout the country.

### *A Coal Shortage Propaganda.*

It would appear that there is a definite "shortage propaganda" being carried on throughout the country by the radical element, which is hoping thereby to bring about nationalization of coal mines and railroads. This propaganda, while not producing the results desired by those back of it, is causing unreasonable and unnecessary demand for coal by industries.

### *The U. S. Chamber of Commerce on the Coal Situation.*

The U. S. Chamber of Commerce is keeping the Association in constant contact with developments at Washington. Below is quotation in part from telegram and letter from the Chamber, under date of July 11th:

*From Telegram.* "For many months National Chamber has followed coal situation closely. Have lost no opportunity to assist in meeting problems. Interstate Commerce Commission has now extended for thirty days its order respecting the use of coal cars and other measures about to be taken to expedite delivery coal to consignees."

*From Letter.* "The coal situation has had a very great deal of attention from us not only recently but over a long series of months. At the present time, as in recent months, we have not thought it advisable to issue alarmist statements, instead seeking to have the situation met adequately through such agencies as the Interstate Commerce Commission and the Car Service Commission of the American Railway Association, both of which have definite authority in the premises.

"As you know, considerable public attention is being given to proposals of different kinds which, even if accepted, would give little or no relief of the kind desired."

### *The Paper Industry and the Present Coal Shortage.*

The paper industry may help itself, and other industries, in this situation:

1 By co-operating as effectively as possible in prompt unloading of cars, whether or no there is a penalty for failure to unload in a given period.

2 By more complete utilization of all car equipment through increasing tonnage carried by cars and in other ways.

3. By increasing facilities for storage of coal.

4. By giving moral support, at least, to the railroads in their efforts to give service required by industries. Let the railroads and the papers know your attitude.

5. By joining with other individuals and other industries in combatting radical propazanda through seeing that the public has the facts as to production of coal, the difficulties being experienced by the railroads, and the needs of the industry. Right publicity will go far towards heading off the spread of a panicky feeling, both as to the coal and the railroad situation. Lend your support to the activities of local organizations in this crisis. Associations of manufacturers, chambers of commerce, traffic organizations in different states are very active. Your personal efforts with them will count.

6. By keeping the Association informed as to your coal situation and the general condition in your community. A common knowledge of common difficulties dispels fear and creates confidence. It is the business of the Association to help in creating confidence when there is reasonable ground for it.

Conditions would seem to indicate that there is no need for a panicky feeling as to the coal situation. There is need, however, for constant vigilance and aggressiveness. The situation will not solve itself. Militant co-operation between individuals and industries—with confidence as to the outcome—will keep wheels turning and coal on the way to the mills.

The Association is keeping in close touch with every source of information and authority in the coal situation.

#### WILSON WILL ADDRESS CONFERENCE.

The New England Forest Conference, to be held at New London, N.H., from August 24 to August 26, will discuss at its business sessions the present newsprint situation, the supply of pulpwood, the Underwood Resolution in the United States Senate, an effort to compel Canada to lift its so-called embargoes on the shipment of pulpwood to the United States, and Mr. Ellwood Wilson, in charge of the Laurentide Forestry Department, has been invited to present the Canadian attitude on the Underwood matter. The Conference is expected to be well attended in view of the extraordinary interests at present in the topics to be discussed.

The Spanish River Pulp and Paper Company, very generously have donated \$100 toward the fund of the playground committee of the Local Council of Women, to be used for the supervision of the play of the children during the vacation at Campbell school, at Sault Ste. Marie.

The playground which is open free to children from all parts of the city, is rapidly becoming the mecca of boys and girls, from the wee tots up to the teen aged. In the neighborhood of 150 play there daily.

#### INSTALLED LAUNDRY EQUIPMENT

The Leves, one of Toronto's leading rag and waste paper firms, has just completed the installation of a complete laundry equipment at their plant on John Street, Toronto, for the sterilizing of rags. The plant will be in operation next week, when wiping rags will be turned out for use in printing and other establishments where wiping rags are used. The firm recently installed a new baling machine which increased their baling capacity by about thirty per cent.

#### SEAMAN LEAVING F.P.L. FOR INDIA

The Forest Products Laboratories of Canada, 700 University Street, Montreal, will lose in August the services of Major L. N. Seaman, at present Chief of the Division of Timber Tests, who has accepted the post of Timber Testing Expert with the Forest Research Institute, Dehra Dun, United Provinces, India. This Institute, finding a property of 45 acres too small, has procured a new property of 1,300 acres and is erecting new buildings and has secured the services of Major Seaman to organize and take charge of the timber testing laboratory which is to form part of the new establishment.

L. N. Seaman studied engineering at Acadia University and the Nova Scotia Technical College obtaining degrees of M.A. and B.Sc. and is an associate member of the Engineering Institute of Canada. He entered the services of the Forest Products Laboratories of Canada in 1914 as Assistant Chief of the Division of Timber Tests and co-operated with Mr. R. W. Sterns, B.Sc., then Chief of the Division of Timber Tests, in the organization and in the inauguration of the first comprehensive work in testing native timbers to be undertaken in Canada. His work at the Laboratories was interrupted during the war by active military service as a Captain in the Canadian Artillery and later as a Major in the English Heavy Artillery.

After the war Major Seaman returned to his former post and was shortly promoted to be Chief of the Division of Timber Tests, succeeding Mr. Sterns who accepted a post with the Abitibi Power and Paper Company.

Up to the present time timber testing at these Laboratories has covered the mechanical and physical properties of ten species of Canadian timber, while two additional species have been tested at their Vancouver branch. In addition to this, special tests have been made of Nova Scotia mine timbers and of substitutes for black walnut as gun stocks.

The work of these Laboratories is of a very real value and importance to all the wood-using industries of the country and deserves the most hearty support and co-operation of all such industries.—M.H.

#### BELGO'S NEW SHIPPING SHED.

The work on the Belgo Paper Company's new shipping shed is proceeding with all speed. The work is in charge of Mr. N. Goodman, construction engineer. The shed is to be of brick on concrete foundations with Barrett specification roof supported on steel trusses. It will be 253 feet long by 72 feet wide covering an area of approximately 18,200 square feet. Double tracks run to the farther end of the shed, where there will be a yard for unloading material to the mill.

On the north end of the shed there will be an unloading platform 72 feet long by 19 feet wide. This platform will be entirely enclosed and with sliding floors along the track side. Part of the basement of the shed will house the wet machine and press room of the new ground wood mill.

The pressed or lapped ground wood will be carried by electrically operated trucks via elevator to the shipping floor. On the main floor of the shed rest room and lavatories will be provided for the men. Over the yard office space is provided for the staff of the order and shipping department. The shed is expected to be in operation by September 15.



## A Brief Review of Foreign Trade Conditions

By W. C. POWERS, of W. C. Powers & Co., Ltd.  
London.

(Contributed to the United States Paper Maker)

The paper industry in Europe during the early part of 1919 shared the general slump in demand, and consequent shading of prices. This was partly due to the widespread theory that the world would speedily return to pre-war conditions, and also to the desire of most business concerns to liquidate their unusually heavy stocks of merchandise.

During the acute shipping difficulties, commencing in 1916, buyers in Great Britain and Continental Europe were forced to carry much heavier stocks than usual. Publishing concerns in England figured that they were not safe unless they had at least twelve months supply of paper; and as their imports were restricted they reduced consumption so as to preserve this ratio of reserve supply.

We saw the same condition to a modified extent in the United States and Canada, and most paper men will remember the slump in buying which set in in November, 1918, and lasted until June, 1919.

Restrictions on the import of paper into England were removed early in 1919, and the British paper manufacturer set up such a yell that the Government reimposed modified restrictions which provided that a consumer might obtain a certain percentage of his purchases from foreign sources. For printing papers this was fixed at 25 per cent. On September 1, 1919, all restrictions against imports were removed. This was done at the behest of the newspaper publishers with a view to widening their purchasing field.

The paper market, which had steadily dropped from the armistice to the end of June, 1919, and was comparatively dull during the months of July and August, commenced to show signs of stiffening in September. By November 1st it was realized that there was not enough paper to go round, and a buying wave swept over the consuming countries, which competed with each other for available supplies. Newsprint, which had dropped to the equivalent of five cents a pound, rose by sudden jumps to 11 cents a pound, and at present writing (June, 1920) it is holding firm at that price. Book papers which had dropped in June, 1919, to 10 cents a pound are now selling at 16 cents, and kraft paper, which was a drug in the market in May and June, 1919 (sales being made at 8½ cents), had reached the dizzy height of 19 cents by March, 1920. Kraft has now dropped to 14 cents. Coated papers had slumped to 15 cents in June, 1919, but are now selling at over 25 cents for the better grades.

The difficult situation created by the pronounced fall of sterling exchange in New York acted as a protective tariff to the English mills and a benefit to those countries whose currency was at a discount in London. This condition, together with the sharp rise in price in Canada and the United States, acted as a bar against the sale of Canadian and American papers. This, combined with the enormous increase in the demand in the United States and Canada, gave the American and Canadian mills an opportunity to market their full product at home, and they have not yet felt the need of European markets. It is hoped

that the recent improvement in sterling will coincide with the availability of product and willingness to export it, so that Canada and the United States can regain the opportunity offered them during 1919.

The Swedish, Norwegian and Finnish mills have taken full advantage of the conditions which prevented Canada and American from supplying the European markets. These countries have shown a keen desire to "get all that the market will stand" in the way of price. The feeling of the paper consumers in Great Britain is that the situation has been aggravated unnecessarily and that they have been exploited to the utmost.

The troubles of the mills in England, France and Belgium are not over yet by any means, and they have a few difficulties in the way of coal, labor and vicious taxation, which our American mills have only felt in a modified degree. The task of rebuilding and extending existing plants is being tackled with "vim" and the present prosperity of the paper trade is enabling the British mills to look forward to competition in the future better equipped physically and financially for whatever may come. That they have already regained their pre-war standard of quality is a remarkable fact, and their intention to re-establish themselves in the export field is a feature which mills on the American side should bear in mind.

I have briefly touched on the situation in Great Britain, France, Belgium and Scandinavia. The only other big paper producers before the war were Germany and what is now Czecho-Slovakia. Latest reports from Germany show that manufacturing activities are about 50 per cent of pre-war figures. The mills in Bohemia and Silesia are doing a little better than this, but they are all suffering from lack of raw material, and particularly from the need of mill equipment, felts, canvas, copper, sulphur and other items.

German paper is commencing to figure in the Belgian and Dutch markets, and since January, 1920, considerable printing and coated papers have been imported into Great Britain. There is a general desire throughout the paper trade in England to avoid any paper business with Germany, and it is felt that whatever paper has been bought directly or indirectly from German sources has been to fill orders which could not be placed elsewhere in any circumstances. How long this will last is a question, but most of the paper men to whom I have talked say that they would rather shut up shop than handle German products.

A close study of the financial situation in Europe, leads one to think that we have seen the worst in France, that Italy still has political and financial troubles of the first magnitude ahead of her, but that Great Britain has turned the corner, and will steadily regain her position of world domination in financial matters.

It would be difficult to hazard a guess as to financial conditions in Austria and Germany; at any rate until they stop printing paper money with no value back of it.

In Sweden and Norway, the man in the street will explain to you that "They have all the money in the world, but no food," and certainly costs of living in Stockholm and Christiania discount anything we have heard of so far in Great Britain or the United States.

In conclusion, our Canadian and American mills can look forward to good business in Europe. Mistakes have been made in recent years, but they have

been made by other exporting countries as well, and the feeling of comradeship has taken a deeper hold than is realized on first impression. This should be turned to good account when American mills are again in a position to export.

### RIORDON'S TO HARNESS THE GATINEAU.

Ottawa, July 10. The development of the Gatineau Valley by the Riordon Company, Limited, which has absorbed the Gilmour and Hughson and W. C. Edwards Company interests, will proceed soon. Notices have been received by the residents of Chelsea Island, a few miles from Ottawa and opposite Chelsea, Que., to quit their cottages by September 30 next in view of the proposed developments. The cottages are rented from Gilmour and Hughson interests, and have been used for many years as summer residences.

It is stated that the big power dam at Chelsea, which will raise the level of the river over twenty feet, will be started this fall or early next spring. This dam will create an enormous amount of power, and will raise the river as far up as the Cascades, that is, seven miles. Chelsea Island will be several feet under water when the river is finally raised by the dam.

It is said, moreover, that the river will be so high, once the dam is built that the road up the Gatineau, and also the railway tracks in the neighborhood of Kirks Ferry, will be flooded by the new level, and will either have to be elevated or rebuilt on higher ground.

The seven miles of still river which this dam will create, will be used as a reservoir for pulp wood.

### WHALEN PULP CO.'S SUCCESSFUL YEAR.

Predictions of a favorable showing by Whalen Pulp and Paper Mills, Ltd., were verified this week by the annual statement which outlined the financial standing of the company for the last fiscal year closing February 29, 1920. According to the report earnings have largely increased and consequently there is a favorable balance on hand as compared with a deficit at the close of the previous year's operations. The gross earnings for the last period were \$4,619,735 as against \$1,065,207 a year ago, and net earnings reached a total of \$875,519 as against \$112,315. After allowing for all expenses there is a profit for the past year of \$323,757, compared with a deficit of \$337,729 for the previous period.

The success attending the operations is due to efficient management and to the enormous demand for pulp and paper products throughout the year. The company, as a result, established upon a sounder basis, and indications point to a continuation of this development. Despite the improved position, however, there is as yet no talk of a resumption of dividends, the management adopting a conservative policy and preparing for a possible price decline in the future.

In his report, George Bury, president, points out that the expenses for the year amounted to 80 per cent of earnings as compared with 97 per cent of the previous year. The fact that a profit was shown was particularly gratifying, in view of the fact that one of the plants was closed for six weeks through lack of orders following the signing of the peace treaty. The directors, while optimistic as to the future, recognize mounting material and labor costs, and a conservative policy in connection with financing has been decided upon, looking to possible falling markets.

Capital appropriation were authorized during the year to a total of \$560,000 for the purchase of equipment. At the end of February the Grand Trunk Pacific completed a car ferry barge, and railway cars are now ferried between Swanson Bay plant and Prince Rupert, thereby cheapening transportation.

The number of tons of pulp produced in 1918 stands at 47,962; in 1919, 41,814.

The fixed assets of the company, including land, buildings, etc., is valued at \$16,117,317, as against \$15,455,074 last year. Investments total \$87,741, as compared with \$20,000. Current assets have increased from \$1,152,747 to \$1,655,019, while deferred charges now stand at \$560,753, as against \$190,786. Current liabilities are down to \$1,012,890 from \$2,184,424 of the previous period. The surplus account stands at \$355,440, as against \$31,683 at the close of the previous year's operations.

### Conserve Timber Revenues.

An innovation during the year was the installation of barkers, the management recognizing the need of conserving the timber resources of British Columbia. Barkers are used for small wood operations to supplement the larger operations. The following is a comparative table showing the distribution during the past two years:

	1920	1919
Gross earnings . . . . .	\$4,619,735	\$1,065,207
Expenses . . . . .	3,741,185	3,952,892
Net earnings . . . . .	878,549	112,315
Taxes . . . . .	56,181	60,104
Fixed Charges . . . . .	498,610	389,940
Profit . . . . .	\$323,757	*\$337,729

\*Deficit for 1919.

### SALVAGING PULP WOOD FROM LAKE SUPERIOR

The salvaging of 6,000 cords of pulp wood lost in the storm of September 24, 1919, is being accomplished along a 100-mile front on the south shore of Lake Superior from Copper Harbor on Keweenaw peninsula to Ontonagon and further west. This raft, invoiced at \$31,000 when lost, is probably worth more now on account of pulp wood scarcity. It was a choice lot of four foot wood from Nipigon Bay, Ont., in tow of the Canadian tug Traveler, and was bound for Ashland to be shipped by rail to the Wisconsin paper mill by its owner the Pulpwood Company of Appleton.

Search this spring showed that the raft had beached itself over such a wide territory of coast as to make salvage difficult. Quantities were found along the coast west of the Porcupine mountains near Union Bay, west of Ontonagon. Fifty miles up the coast the life savers at the mouth of the Portage canal had piled up some of the wood and were using it as fuel.

The largest quantities, were found between Eagle River and Copper Harbor and at the latter place headquarters were established by Kingston, agent of the pulp wood company and with a fleet of gasoline boats the wood is being made into a raft and secured by a boom of logs towed from Ashland by the tug Sauganuck of Milwaukee.

A considerable quantity has already been taken care of and it is estimated that of the 6,000 cords lost in the storm, 1,000 cords may be towed to Ashland within a few weeks.

# Canada's Exports of Pulp and Paper

Reprinted from the International Number Pulp & Paper Magazine

Canada both imports and exports pulp and paper. The exports, however, greatly exceed the imports, and constitute a most important contribution to the Dominion's foreign trade account. The development of this branch for export trade has been most remarkable. In 1890 Canada's pulp and paper exports were valued at \$122; for the calendar year 1919, they amounted in value to \$97,166,715, and were made up as follows:

	1919	Paper, Etc	Chemical Pulp	Mechanical Pulp	Total
January	\$4,582,687	\$2,193,194	\$362,322	\$7,138,203	
February	5,231,878	1,916,828	217,421	7,366,127	
March	5,970,598	2,041,884	226,554	8,239,036	
April	3,630,238	1,120,999	217,711	4,968,939	
May	5,138,420	2,315,276	356,965	7,810,661	
June	4,124,526	1,813,918	619,981	6,557,525	
July	4,639,225	2,654,333	436,694	7,730,162	
August	4,999,258	2,873,186	475,735	8,348,179	
September	4,587,579	2,231,576	511,492	8,330,557	
October	5,954,916	3,965,946	1,942,716	11,863,578	
November	4,911,514	3,108,514	997,408	9,017,436	
December	6,212,439	2,766,259	817,692	9,796,372	
Totals	\$59,983,269	\$30,000,995	\$7,182,541	\$97,166,715	

The Dominion's total export trade for the fiscal year amounted to \$1,207,613,806, of which the pulp and paper industry accounted for \$83,872,566 or 6.9 per cent. Of the total value of the pulp and paper exported, \$70,341,355 or 84 per cent., represents exports to the United States.

The significance of the figures is emphasized by the fact that throughout the year in question, American "exchange" in Canada was at a premium, ranging from 3 to over 5 per cent. (It has since reached much higher figures). These exports, therefore, in addition to swelling Canada's foreign trade, performed the useful function of creating "exchange" at the rate of approximately \$240,000 a day for every working day in the year, thereby offsetting to that extent Canadian obligations in the way of interest payments and payments that had to be met for raw material imported.

The principal countries of export were:

	United Kingdom	United States	Japan	Other Countries
Paper and mfs of	\$1,171,810	\$39,666,535	.....	\$8,327,450
Woodpulp, Chemical	611,399	26,256,265	2,775,485	583,796
Woodpulp, Mechanical	3,033	4,418,555	.....	58,327
Totals	\$1,786,242	\$70,341,355	\$2,775,485	\$8,969,483

A classification of the larger items of exports of paper and paper products for the year shows:

Printing paper (13,248,542 cwt.)	\$40,718,021
Wrapping paper (325,792 cwt.)	2,452,296
Paper boards	3,037,279
Films for photographers' use	1,302,886
Wall paper (3,859,108 rolls)	360,567
Felt and roofing paper	310,778
Stationery	218,791
Miscellaneous grades of paper	983,965

During the war period Canada's exports of unbleached and bleached chemical pulp were stimulated to a marked extent by reason of the exclusion from the American markets of Scandinavian and European products. In 1910 the United States imported 58,325 tons of unbleached chemical pulp from Germany, 57,798 tons from Sweden, 35,903 tons from Canada and 30,730 tons from Norway, a total of 202,081 tons. The following year Sweden sent 84,378 tons, Germany 50,357 and Canada 29,372 tons. In 1912, American imports were: Sweden, 107,884 tons; Canada, 47,052. In 1913 Canada exported 62,733 tons to the United States, in 1914, 97,541 and in 1915, 135,445, Sweden's exports that year amounting to 140,655 tons. In 1916, United States imports of unbleached pulp from Canada for the first time exceeded those from any other country, the figures for the year being: Canada, 191,116 tons; Sweden, 159,551. In 1917 the Canadian exports were 214,313 tons; Swedish 126,453. In 1918 they were, Canada, 366,536 tons; Sweden, 672; Norway, 4,406.

In bleached chemical pulp, the United States imported from Germany in 1910, 22,962 tons; Norway, 38,100 tons; Sweden, 1,943 tons; Canada, 6,376 tons, a total of 76,845 tons. In 1914, the figures were, Germany, 23,249 tons; Norway, 63,030 tons; Sweden, 25,344; Canada, 11,602.

Since the war ended Scandinavian pulp has again found its way to the American market, but not in sufficient quantities to interfere materially with the demand for Canadian pulp in that market. Furthermore, a shortage of pulp in all European countries gives the Scandinavian producers a market nearer at home and one in which they enjoy decided advantages.

Figures are available showing the value of Canada's exportations of paper and pulp for the full year of the post-war period from November 1, 1918, to October 31, 1919. They show that Canada exported during this period products of this kind valued at 891,936,090, as compared with \$73,462,901 for the corresponding months of the final year of the war, a gain for the post-war period of \$18,473,189.

The latest trade returns show that in addition to the United States, which continues to be our best market, we are now exporting pulp and paper products to the United Kingdom, the Argentine Republic, Australia, Brazil, British South Africa, China, Cuba, France, New Zealand, Peru and some other countries.

During the months immediately following the armistice, Canada enjoyed a slight advantage over the other countries in the British markets, being exempted from certain import restrictions imposed by the British authorities. This, however, proved a somewhat dubious benefit on account of the difficulty encountered in securing shipping space on ships going to British ports. It has since been obviated by the opening of the British markets to all countries on the same basis.

The following tables show in detail the character, destination, quantity and value of all Canadian ex-

ports of paper and paper products for the fiscal year ending March 31, 1919:

*Woodpulp, Chemically Prepared.*

Exported to:	Cwt.	\$
United Kingdom	140,364	611,399
British Africa, South		
British East Indies		
India		
British Oceania		
Australia	36,938	121,411
New Zealand	6,031	25,989
Argentine Republic	20,420	85,896
Brazil	18,774	72,210
China		
France		
Italy	54,809	273,900
Japan	639,997	2,775,486
United States	7,414,825	26,256,265
<b>Total</b>	<b>8,332,930</b>	<b>30,226,856</b>

*Woodpulp, Mechanically Ground.*

Exported to:	Cwt.	\$
United Kingdom	2,528	3,033
British Oceania		
Australia	1,731	3,029
Argentine Republic	8,000	8,800
Brazil	43,318	46,498
Cuba		
France		
Mexico		
Spain		
United States	3,453,149	4,418,555
<b>Total</b>	<b>3,508,726</b>	<b>4,479,915</b>

*Printing Papers.*

Exported to:	Cwt.	\$
United Kingdom	9,310	38,484
Bermuda	855	3,667
British Africa, South	105,818	406,401
British East Indies		
India	1,936	9,251
British Guiana	5	116
British Honduras		
British Oceania		
Australia	643,101	2,081,911
Fiji	301	1,185
New Zealand	242,336	862,402
British West Indies		
Barbados	498	1,779
Jamaica	239	816
Trinidad and Tobago	1,540	7,593
Newfoundland	28	209
Argentine Republic	215,754	781,587
Bolivia		
Brazil	28,101	105,130
Chile	13,361	29,927
China	19,824	58,484
Colombia	4,008	16,717
Costa Rica	970	2,833
Cuba	8,055	27,528
Ecuador	148	523
France	29,528	100,676
Greece	947	3,218
Guatemala		
Honduras	523	2,448

Italy	10,335	33,076
Japan	3,207	15,193
Mexico	1,740	6,361
Netherlands		
Dutch East Indies	768	2,699
Dutch Guiana		
Dutch West Indies	26	111
Nicaragua		
Panama	4335	14,316
Peru	11,523	39,655
Portugal		
Portuguese Africa		
Russia	586	2,022
Salvador	486	2,885
San Domingo	75	324
United States	11,880,069	36,031,358
Alaska	806	1,740
Hawaii	483	1,015
Philippine Islands		
Porto Rico	817	3,014
Uruguay	4,177	14,072
Venezuela	1,920	7,294

**Total** 13,248,542 40,718,021

*Wrapping Papers.*

Exported to:	Lbs.	\$
United Kingdom	505,900	30,649
Bermuda	56,800	2,768
British Africa, South	6,148,700	512,977
British East Indies		
Ceylon	21,600	1,947
India	36,800	2,758
Straits Settlements	4,500	357
Other		
British Guiana	5,000	389
British Oceania		
Australia	6,938,500	473,119
Fiji	1,300	91
New Zealand	851,600	61,751
British West Indies		
Barbados	700	73
Jamaica	21,600	1,812
Trinidad and Tobago	40,200	2,529
Other	67,300	5,983
Hong Kong		
Newfoundland	91,400	5,398
Argentine Republic	3,700	297
Brazil	720,600	55,230
Chile	394,500	33,630
China	141,100	12,150
Colombia	56,000	4,442
Cuba	2,500	447
France	457,700	30,977
St. Pierre and Miquelon	6,000	339
Japan	8,285,900	751,575
Mexico		
Netherlands		
Dutch East Indies	7,500	401
Nicaragua	1,900	96
Panama		
Peru	15,500	1,324
Russia	58,000	4,069
United States	7,621,900	454,377
Philippine Islands	1,800	134
Uruguay		
Venezuela	2,700	217
<b>Total</b>	<b>32,579,200</b>	<b>2,452,296</b>

<i>Wall Paper.</i>					
Exported to:	Roll	\$			
United Kingdom	.....	.....	.....	India	87,192
Bermuda	.....	.....	.....	British Oceania	.....
British Africa, South	255,701	22,030	.....	Australia	2,483
British Guiana	32,030	2,123	.....	Fiji	.....
British Oceania	.....	.....	.....	New Zealand	837
Australia	1,255,427	122,519	.....	British West Indies	.....
Fiji	140	22	.....	Jamaica	571
New Zealand	716,784	83,106	.....	Egypt and Sudan	5,842
British West Indies	.....	.....	.....	Newfoundland	6,510
Barbados	.....	.....	.....	Argentine Republic	2,670
Jamaica	1,825	183	.....	China	53,971
Trinidad and Tobago	26,534	1,231	.....	France	.....
Other	1,365	68	.....	St. Pierre and Miquelon	20
Newfoundland	791,772	62,421	.....	Portuguese Africa	2,433
Argentine Republic	10,889	1,850	.....	United States	1,887,389
Bolivia	8,652	942	.....		
Chile	488,778	40,520	.....	Total	\$3,037,279
Colombia	13,757	1,877	.....		
France	.....	.....	.....		
St. Pierre and Miquelon	982	142	.....		
Italy	.....	.....	.....		
Netherlands	.....	.....	.....		
Dutch Guiana	300	21	.....		
Panama	2,050	219	.....		
Paraguay	.....	.....	.....		
Peru	117,626	8,940	.....		
United States	134,084	12,245	.....		
Uruguay	412	108	.....		
Total	3,859,108	360,557	.....		

<i>Felt and Roofing Paper.</i>				<i>Films for Photographers' Use and for Moving Pictures.*</i>	
Exported to:		1919.		Exported to:	1919.
United Kingdom	.....	\$ 95,717	.....	United Kingdom	\$ 130,953
Bermuda	.....	60	.....	Bermuda	.....
British Africa, South	.....	5,690	.....	British Africa, East	1,638
British Africa, West	.....	138	.....	British Africa, South	732
British East Indies	.....	.....	.....	British Africa, West	349
Ceylon	.....	435	.....	British East Indies	.....
India	.....	1,594	.....	Ceylon	2,075
British Guiana	.....	2,363	.....	India	19,616
British Oceania	.....	.....	.....	Straits Settlements	475
Australia	.....	3,516	.....	British Oceania	.....
New Zealand	.....	10,636	.....	Anustralia	.....
British West Indies	.....	.....	.....	New Zealand	.....
Barbados	.....	.....	.....	Egypt and Sudan	48,604
Jamaica	.....	.....	.....	Malta	2,016
Trinidad and Tobago	.....	994	.....	Newfoundland	148
Other	.....	27	.....	Argentine Republic	.....
Newfoundland	.....	61,608	.....	Denmark	.....
Colombia	.....	.....	.....	Greenland, Iceland, etc.	555
France	.....	.....	.....	France	370
St. Pierre and Miquelon	.....	257	.....	St. Pierre and Miquelon	14
Italy	.....	.....	.....	Germany	.....
Netherlands	.....	.....	.....	Italy	.....
Dutch East Indies	.....	430	.....	Mexico	.....
United States	.....	127,313	.....	Morocco	90
Porto Rico	.....	.....	.....	Russia	50
Total	.....	\$310,778	.....	Siam	177

<i>Paper Board.</i>					
Exported to:		1919.		Total	
United Kingdom	.....	\$ 873,331	.....	.....	\$1,302,886
British Africa, South	.....	114,030	.....	.....	.....
British East Indies	.....	.....	.....	.....	.....

<i>Other Paper, N.O.P.</i>					
Exported to:		1919.		Exported to:	1919.
United Kingdom	.....	\$ 2,676	.....	United Kingdom	\$ 2,676
Bermuda	.....	5,379	.....	Bermuda	5,379
British Africa, South	.....	191,743	.....	British Africa, South	191,743
British East Indies	.....	.....	.....	British East Indies	.....
India	.....	.....	.....	India	.....
Other	.....	.....	.....	Other	.....
British Guiana	.....	1,535	.....	British Guiana	1,535
British Oceania	.....	.....	.....	British Oceania	.....
Australia	.....	280,323	.....	Australia	280,323

\* Films are no longer classed as Paper Exports in the Trade of Canada Reports, but appear as "Scientific and Educational Equipment."

Fiji	1,416	Morocco	90
New Zealand	165,897	Netherlands	3,530
British West Indies	1,473	Dutch East Indies	21
Barbados	1,383	Dutch Guiana	111
Jamaica	7,382	Dutch West Indies	96
Trinidad and Tobago	4,525	Nicaragua	20,872
Other	25	Norway	14,535
Hong Kong	53,728	Panama	49,919
Newfoundland	5,921	Paraguay	.....
Argentine Republic	2,481	Peru	.....
China	13,211	Portugal	.....
Cuba	6,961	Portuguese Africa	2,433
St. Pierre and Miquelon	665	Russia	7,756
Italy	106,164	Salvador	2,886
Japan	.....	San Domingo	324
Mexico	.....	Siam	177
Norway	20,872	Spain	46,586
Russia	1,625	Sweden	3,168
Switzerland	.....	Switzerland	.....
United States	108,583	United States	39,666,535
Total	\$983,968	Alaska	1,740
<i>Total Paper.</i>		Hawaii	1,015
Exported to:	1919.	Philippine Islands	134
United Kingdom	\$1,171,810	Puerto Rico	3,014
Bermuda	11,874	Uruguay	14,180
British Africa, East	1,638	Venezuela	7,511
British Africa, South	1,253,603		
British Africa, West	487	Total	\$49,165,795
British East Indies	.....		
Ceylon	4,457		
India	120,411		
Strait Settlements	832		
Other	.....		
British Guiana	6,526		
British Honduras	.....		
Australia	2,963,871		
Fiji	2,714		
New Zealand	1,184,629		
British West Indies	.....		
Barbados	3,325		
Jamaica	4,765		
Trinidad and Tobago	19,729		
Other	10,603		
Egypt and Sudan	54,446		
Hong Kong	25		
Malta	2,016		
Newfoundland	190,022		
Argentine Republic	792,325		
Bahia	942		
Brazil	160,360		
Chile	104,077		
China	127,086		
Colombia	23,036		
Costa Rica	2,833		
Cuba	11,186		
Denmark	.....		
Greenland, Iceland, etc.	555		
Ecuador	523		
France	138,984		
St. Pierre and Miquelon	1,437		
Germany	.....		
Greece	3,218		
Guatemala	.....		
Honduras	2,118		
Italy	33,076		
Japan	872,932		
Mexico	6,361		

#### PAPER PRODUCTS MADE IN CANADA.

The following is but an incomplete list of the pulp, paper and allied products made in Canada:

Bags, blanks (plain white, coated, and colored), blotting, bond, book, boxboards, bristol builders' boards, boards, building paper.

Calendar, carpet felt (plain and pleated), cartridge, catalogue, chipboard, coated boards, covers and crepe papers.

Drug, dry, dryproof, duplex waterproof.

Envelope papers.

Fibres, fibre boards, flat gummed, folding board, French folio.

Glassine, greaseproof, greys, groundwood pulp.

Hardware, hosiery.

Insulating paper.

Jute board.

Kraft pulp, kraft paper (wrapping and tissue).

Leather boards, ledger and lithograph papers.

Manila rope, mill boards, mimeograph, M.F. and S.C. coated.

News board, newsprint paper.

Parchment (genuine and imitation), pasted, poster, program.

Roofing papers.

Sulphate pulp, sulphite fibre.

Tag manila, ticket board, tissue, tympan manila.

Wood boards (pure and filled), waxed and writing papers.

#### Paper Products.

Bags, boxes.

Cardboards, cartons for butter, eggs, meat, corrugated boxes, cores, cups.

Gummed sealing tapes.

Incurated fibreware (pails, scrub-boards, tubs).

Labels.

Napkins.

Roofing.

Sheathing, shirt-front boards, shoe-making boards, stair pads, suit and skirt boxes.

### PULP AND PAPER IN NEWFOUNDLAND.

St. John's.—From the budget speech of the Hon. Henry Brownrigg, Minister of Finance, it is evident that the government of Newfoundland is ready to cooperate with outside capital in an endeavor to exploit the pulp and timber resources of the Island Colony. Speaking on the subject in the Newfoundland legislatures, Mr. Brownrigg said:

"It is my firm conviction that it is the bounden duty of the Government of this country to do all in its power to encourage the investment of capital in our forest areas and not place vexatious restraints upon capital that may aid in the development of the dormant resources of this Colony in any direction, provided always that the interests of the people are safeguarded in all respects."

There are now in operation on the island two large pulp and paper mills, the Anglo-Newfoundland Development Company's mills, owned by the Harmsworth interests, which are located at Grand Falls, and A. E. Reed Company's mills at Bishop's. Last year these two companies exported 22,819 tons of paper, valued at \$1,545,344; 3,128 tons of pulp valued at \$43,265 and 4,023 tons of sulphite valued at \$431,913. Two other mills will be exporting during the coming year. A steady growth in the development of the pulp and paper industry on the island is now anticipated, and on this subject the minister said:

Prior to 1909 the manufacture of paper in the country was regarded as impracticable and the failure of such an undertaking was confidently predicted by men of wide experience in the business. These opinions and predictions were based on erroneous information relative to the climatic conditions in this country.

The Harmsworth after thorough investigation erected a \$6,000,000 plant, and have since then practically duplicated their original outlay at Grand Falls.

#### Supply Northcliffe Papers

From these mills they are supplying the complete requirements of the extensive line of Northcliffe publications in England, and disposing of all the surplus stock they can turn out and ship to United States and other markets. Last year they shipped to the Associated Newspapers of the United States some 50,000 tons of paper and also sent a considerable quantity to Australia.

Brazil, Argentina and Chili have also placed orders for the Grand Falls paper during the past two years, and there is a likelihood of South America becoming a purchaser of Newfoundland paper on a large scale if the market is properly attended to. Before the war Germany supplied a large percentage of South America's paper requirements. The highest testimonials as to the superior quality of Newfoundland paper have come from those who have used it abroad.

The operation of the Anglo-Newfoundland Development Company, and the A. E. Reed Co. have only demonstrated to the world the value of Newfoundland forests as a base of supply for pulp and newsprint. These operations have been a world-wide advertisement for this country's timber areas and it is bearing good fruit."

### FLAX STRAW PULP MILL PROJECTED.

A report from Regina says:—

Regina, July 21.—Plans are now under way for the establishments of a million dollar paper mill in Southern Saskatchewan. Large financial interests in Toron-

to are behind the scheme. It is proposed to utilize the thousands of tons of waste straw in this province for the manufacture of paper.

Close proximity of cheap coal is one of the essentials in the location of such a plant, and it is believed by the men behind the scheme the lignite fields of Southern Saskatchewan offer the necessary fuel requirements.

A preliminary survey of the territory is now being made by W. R. Phillips, a former mayor of Trenton, Ont., who made the announcement today regarding the proposed establishment of the new industry.

According to Mr. Phillips there is no question about the possibility of manufacturing paper from straw. There are several plants on the American continent which are being successfully operated, one being in Eastern Canada. It has been found from experience that from two tons of straw and two tons of coal there can be manufactured one ton of paper.

### FIRE PREVENTION ON BLOCK PILE

Following a recent visit of Mr. T. J. Hoxie, a special investigator of the Mutual Insurance Company, and an expert on the fungi that attack pulp wood in storage, Laurentide Company is making experiments with spraying the block pile to prevent fire. This spraying is now being done continuously to avoid any fire that a chance spark might start in little piles of sawdust, bark, or chips that accumulate. Fire protection apparatus is now available in the block pile yard which is believed can cope with any ordinary fire that might become ignited, but the spraying system now in use will probably give little chance for its employment.

Aside from the value of preventing any small fires, the continuous wetting of the block fire prevents the formation of fungus which attacks and destroys pulp wood.

It will be recalled that Mr. Hoxie read a valuable paper on Fires in Block Piles at the Technical Section meeting. See Pulp and Paper, Jan 29, 1920.

### FORT WILLIAM CO.'S TIMBER LIMITS.

The pulpwood limits acquired by the Fort William Pulp and Paper Co. comprise one-thousand square miles of limits on the Grand Trunk Pacific between Fort William and Sioux Lookout, known as the Farlinger MacDonald limits. Lease runs twenty years with privilege of renewing for two further periods of 25 years each.

It is estimated half a million dollars yearly in freight rates will accrue to the Dominion government from the transport of pulp logs from the limits to the mills here, and in addition the government pulp-cutting dues.

Rolph Darwin and Pearce, have issued the announcement that the management of their Woodpulp and Chemical Department, has now been taken over by Mr. Robert Marshall in succession to Mr. Fred Fielding. Mr. Marshall has had many years' practical and commercial experience in the pulp and paper trade in Scandinavia. During the War he served as British Vice-Consul at Stockholm and at Haparanda.

Some people don't believe in putting off till tomorrow the trouble they can make to-day.

### ADD FOREST ENGINEER TO STAFF.

Pulp and Paper Accessories, Limited, Shanghnessy Building, Montreal, have added forestry work to their facilities for serving the industry. Their letter advising us of this step has some good "dope" so we reprint it in full:—

Of late several prominent Canadian lumbermen and foresters have repeatedly pointed out that the Canadian forests, the source of raw material for our lumber and pulp wood industries, do not receive the care and attention they should get. As a consequence, the lumber supply of this country is gradually being depleted, and the time may not be very far away when the above mentioned industries, which are bound to increase in importance by the ever increasing shortage of timber and pulpwood in the United States, may find themselves in a precarious position. It has therefore become of paramount interest to the owners of our forests to take steps to prevent waste and to increase the production of their timberlands to meet their present and future needs.

This can be done by scientific methods only, and our firm has for some time considered if and how it might be able to assist owners of timberlands in the care of their forests. We have come to the conclusion that the best service we could render the Canadian forests would be by placing a forestry engineer of indisputable theoretical and practical knowledge of modern forestry science at their service.

Our attention has for a long time been directed towards Sweden, which country, with only a fraction of the timber area of Canada, has maintained its position on the world's market as one of the most important timber producing countries.

One of our representatives, when recently visiting Sweden, succeeded in engaging the services of a prominent Swedish Forester, a graduate of the Royal Forest Institute, Stockholm, with extensive practical experience as Chief Forester for one of the largest lumber concerns of Sweden. This concern furnishes a striking example of what results can be obtained by the forestry methods referred to above. Its holdings are 150 English square miles of which only 96 square miles are productive timberland.

The yearly growth of these timberlands is enough for an annual production of 10,000,000 s. feet sawn lumber and 10,000 tons of chemical pulp. How much would not the forests of Canada yield if handled in the same manner?

When the arrival of the above mentioned Swedish Forester we are starting a new department of our firm, through which all the experience of the Swedish forestry, already proved as practical and economical, is at the service of Canadian industry.

We shall always be pleased to give information and advise regarding forestry work and methods, and we are prepared to make estimates of growing timber, make maps of timberlands and to undertake any kind of forestry work, applying the most economical, modern and scientific methods.

Yours very truly,

PULP & PAPER MILL ACCESSORIES LTD

### WILL MAKE REMADE PULP.

Buffalo.—The Economy Pulp Products Company has acquired the plant on Goose Island, Tonawanda, formerly occupied by a vinegar manufacturing firm, and will at once begin the creation of a deinking plant. The firm will manufacture pulp from both magazine

paper and newsprint, using a new process which Rev. Louis A. Saeger, a Buffalo minister, claims he has perfected. It is claimed the process is the most satisfactory yet perfected.

Officers of the firm are Buffalo paper men, including H. J. Simon, president; J. F. Fisher, vice-president; C. P. Chrisgau, treasurer; J. C. Stockman, secretary, and G. A. Peterson, sales manager.

### HOW RAILWAY OPERATING COSTS MOUNT

The Railway Association makes an appeal for the full utilization of space in freight cars.

"Ho Bill! That'll hold her! Slam her shut! Call it a car! Hey, there, you checker! Jam your blinkin' seal on that door! . . . Couple on and yank her out! Us guys is quick workers. We got two more to load to-night! Call it a car!"

Such is the good-natured formula—or approximately the formula by which something like \$18,000,000 may be said to have been added unnecessarily to the past twelve months' cost of operating the Canadian railways. It is the jocular touch of an indifferent hand—by which the "safety margin" of car supply over car demand in Canada was, and still is, being cut down every day in spite of the railways. It is the little episode—repeated thousands of times a day at thousands of loading points—which added 500,000 unnecessary car trips to the Canadian transportation program in the last year—each trip averaging 243 miles under load and 89 miles empty and wasting 14 car days.

Thus the constant service of 10,000 freight cars was devoted to unnecessary work instead of remaining in reserve to meet emergencies. Thus 4,000 unnecessary trains were moved. Thus 8,000 unnecessary engines were employed instead of being in reserve. Thus 79 miles of precious track room were occupied instead of being free to preserve the elasticity of terminal and passing track capacity, thus reducing the margin between any easy car movement—and possible congestion, with embargoes. Thus 100,000 times 17 tons of tare weight (the weight of the car alone) was added to the constant burden of the railways the whole year through—or 170,000 extra tons. Thus 6,000,000 tons of coal were taken from the available supply. Thus all movement was slower. Thus the entire machinery of Canadian business was slowed up! Depressing, subtly, but surely, the volume of business in your factories and warehouses! Cutting down the rate of turnover! Running up the overhead per unit of sale! Thinning your profits!

When shippers were on their toes during the war, average load per car rose to 27.05 tons. Now it is averaging 22.69! The loss is almost five tons per car! This loss is almost wholly explainable by reference to the relaxed attitude of the shipper. His employees have a tendency to "let down" and to adopt something like the formula quoted at the top of this appeal. It is good business for you, for the country, and for your railway service to banish that attitude and substitute for it: "Ho, Bill! Call that a car? Not on your life! Open her up again! We'll cram her till the axles bust!" But they won't "bust." Try!

People seem not to see that their opinion of the world is also a confession of character.—Emerson.

Be sure you replace all guards when through repairing a machine. Think about the other fellow.





## Technical Section



### NEW MEMBERS IN TECHNICAL SECTION.

The secretary of the Technical Section of the Canadian Pulp and Paper Association announces the election of F. P. Mathews, Dryden Pulp and Paper Co., as full member; P. Taylor, Bathurst Lumber Co., as associate member; E. P. Cameron, Forest Products Laboratories of Canada and A. E. McLean, Bathurst Lumber Co., as junior members.

Mr. R. M. Decew, Price Bros. & Co., Kenogami, Que., has been elected to junior membership in the Technical Section of the Canadian Pulp and Paper Association.

### OUTLINE OF SECTION ON SULPHITE PULP.

This section for the Text Book on Pulp and Paper Manufacture is nearing completion and readers who have suggestions are asked to send them in at once. If you think of something that may be overlooked, please say so.

#### Introductory.

1. History.
2. General description of various processes. Direct and indirect cooking.
3. Wood used for sulphite pulp.

#### Acid Making.

1. General outline of various systems.
2. Burning of sulphur. Types of burners and operation.
3. Burning of pyrites. Types of burners and operation.
4. Combustion. Temperature and air regulation.
5. Cooling of gases and removal of impurities. Types of gas coolers.
6. System of gas absorption.
  - (a) Milk of lime system. Three tank system (intermittent); Barker system (continuous).
  - (b) Tower system.
7. Reclamation of acid. Description of various methods, especially the reclaiming tower.
8. Chart showing operations of acid making including reclaiming.
9. Testing and control in connection with acid making.
  - (a) Tables showing composition of various grades of sulphur, pyrites, limestone.
  - (b) Burner gas, temperature, draft, chemical tests, including automatic testing.
  - (c) Acid control. Specific gravity tests and chemical analyses. Crandon's acid regulator.

#### Digesters.

1. Various types. Horizontal and vertical types.
2. Lining.
3. Fitting.
4. Capacity. (table)

#### Cooking.

1. Filling of digester.
2. Theories of cooking.
3. Practice of cooking including reclaiming of acid.
4. Manipulation of cooking for obtaining different grades as strong, news, easy bleaching, etc.
5. Effect of variables.
6. Blowing and blow pit.
7. Washing.
8. Yield of pulp.
9. Recovery of by-products.
10. Other sulphite processes, Mitscherlich, etc.
11. Testing and control in connection with cooking processes.
  - (a) Testing moisture of chips.
  - (b) Testing raw acid.
  - (c) Steam regulation maintaining even load or boiler plant.
  - (d) Temperature recorder.
  - (e) Pressure recorder.
  - (f) Testing of liquor during cooking—hot test, cold test, Mitscherlich test. Pulp test; smell and color of liquor.

### REVIEW OF RECENT PATENTS.

**K-8. Dyeing treatment for paper yarn pulp.** D.R.P. No. 312,867, Meister, Lucius & Brunning, Papierzeitung, 1919, p. 1742; Color Trade J.; Paper, 26, 52, (1920). The most serviceable results are obtained in the dyeing of paper yarns by the use of sulfo-acids produced by acting on raw xylool, or solvent naphtha, or on the resinous condensation product of this carbohydrate and formaldehyde, with sulfonating agents. The method of preparing them is outlined. The pulp is treated by first adding the rosin size, then the dye-stuff solution, and finally, after mixing for  $\frac{1}{2}$  hr., Al sulfate is added. If it is desired that the stuff become warm through prolonged heating, the alum is added shortly before emptying.—A.P.C.

**K-10. New process of sizing paper.** D.R.P. No. 317,948, Max Muller, Finkenstein, Papierfab., 1920, p. 44; Paper 26, 52, (1920). The invention consists in the precipitation of the sizing substances of the mixture of solution of colloid matter with water-glass solutions, by the addition of acids or acid salts, especially Al<sub>2</sub>O<sub>3</sub> combinations or mixtures of the same, partially or entirely before the addition of the stuff. Further methods of carrying out the new process consist in the simultaneous addition to the sizing materials of substances that increase the durability and at the same time possess precipitant, or sizing properties or both. Moreover, loading, color, or other material, in the form of emulsions, can be added to the mixing medium during its preparation.—A.P.C.

The law of nature is, that a certain quantity of work is necessary to produce a certain quantity of good of any kind whatever. If you want knowledge, you must toil for it; if food, you must toil for it; and if pleasure, you must toil for it.—Ruskin.



# UNITED STATES NOTES

The Beckett Paper Company of Hamilton, Ohio, which has just filed notice of an increase of its capital from \$400,000 to \$1,000,000, has under consideration extensive improvements to its plant at Hamilton. These extensions are necessitated by the increasing demands for the Company's product of writing, bond and book paper which are being marketed in all parts of the country. The Beckett Paper Company is one of the oldest concerns of its kind in the United States. Thomas Beckett, president, comes from an old and influential family and is regarded as one of Hamilton's most enterprising citizens. His company was one of the first in the middle West to inaugurate welfare work among its employees.

A serious dearth in paper napkins is facing the country, according to G. H. Sallender, manager of the American Lace Paper Co., of Milwaukee, Wis. Mr. Sallender says that production at present is only a quarter of the demand and that within the next few months if conditions do not change, paper napkins will be but a memory. Underproduction of pulp is blamed.

Beginning January 1, the Whittaker Paper Company, Detroit, will occupy the building which now houses the Detroit branch of the Goodyear Rubber Company. This building has been purchased by the Whittaker people so that they would be enabled to concentrate the work of all their departments under one roof. \$275,000 was the consideration figuring in the deal.

Articles of incorporation have been filed with the Secretary of State, Idaho, by the Howard Pulp and Paper Corporation, capitalized at \$25,000,000.

The Keyes Fibre Company of Waterville, Me., whose principal product, wood pulp plate and dishes marketed under the trade name "Papirus," has largely superseded the old-fashioned paper plates, is planning the erection of a new 40-ton pulp grinding mill at Waterville. A contract has just been closed with the Shawmut Manufacturing Company of New York for use of the greater part of the power now being developed at Shawmut, Me.

The Southern Newspaper Publishers Association, at its recent convention, held at Asheville, N.C., elected Marcellus R. Foster of Houston, Texas, president for the ensuing year. Other officers chosen are: W. A. Elliott, Jacksonville, "Times Union," first vice-president; Charles R. Stewart, Lexington, Ky., "Herald," second vice-president; and W. C. Johnson, Chattanooga, Tenn., "News," secretary and treasurer. The wood pulp situation, 5 cent dailies, 10 cent Sunday editions, nine column papers, second class postage, the newsprint supply and labor questions were among the topics discussed.

Oscar C. Merrill, chief engineer of the United States Forest Service, has been appointed executive secretary of the newly created Federal Power Commission, the appointment being made by Secretary of War, Newton D. Baker, who is chairman of the Commission. Mr. Merrill on taking office, made arrangements for an advisory committee to draft regulations under the act, and on this committee the War Department named Gen. Enoch H. Crowder, the Interior Department se-

lected Herman Stabler and the Agricultural Department designated Mr. Merrill to look after its interests. The act gives the commission authority to prescribe regulations for the leasing of waterpower sites on Government land and on all navigable rivers. It is designed to conserve natural resources and afford cheaper power. The first meeting of the commission will be held this week at Washington. More than fifty applications for the leasing of sites await action by the commission. W. S. Murray has been named by the United States Geological Survey as chairman of its engineering staff to make an investigation and report on the feasibility of a super-power zone between New York and Boston.

Fire wrecked the wood barking plant of the St. Regis Paper Company at Deferiet, N.Y., last week, causing damage estimated at \$10,000.

According to a report made to the Senate by the Forest Service of the United States Department of Agriculture, the present shortage of newsprint paper in the United States is due to a serious depletion of forests in the Northeastern and Lake States where there is an over-development of the pulp and paper industries. In view of the unfavorable situation in these localities, the report points to the vast undeveloped timber areas of Alaska as the only available source from which a perpetual supply sufficient to meet a substantial part of the newsprint requirements of the United States may be obtained with a proper development of these resources. The report recommends a comprehensive survey to furnish exact information upon the stand and location of suitable timber in the new regions and other needed data.

The Allagash Land Company, organized recently at Bangor, Me., for the purpose of taking over an option on a tract of land on upper St. John waters, has filed a certificate of incorporation at Augusta, Me. The capital stock of the company is \$500,000 and the par value shares is \$100. E. B. Draper, the pulpwood operator, at present holds the option on the tract, which, though part of the Eaton holdings, was not included in the recent transfer by the latter's managers to the Passamaquoddy Land Company.

Mr. J. Strothard Brooks of the James W. Sewall office, timber estimators and foresters of Old Town, Maine and Washington, D.C., is making a quick examination of a large timber tract in Quebec. He has with him Mr. Joseph D. Lanto of the same organization. Messrs. James W. Sewall and James A. Connors have just returned from a timber valuation trip in Tennessee. They report business exceedingly good, almost to the point of saturation.

## NO MORE PULP FOR JAPAN AT PRESENT.

Owing to the unsettled financial conditions, it looks as though there would be no more pulp shipped to Japan from British Columbia until after the first of 1921, when it is hoped the financial situation will be much improved. Just now there is not a pound being shipped.

# PULP AND PAPER NEWS

Work has been commenced on the factory which is being established in Ingersoll, Ont., by the Dominion Cone Company, Limited, and Folding Paper Boxes, Limited, of Toronto. The ratepayers recently carried a bylaw granting a loan of \$25,000 and other concessions to the firm. The building will be two stories, 49 by 81 feet, with a front of red pressed brick.

Mr. Charles V. Syrett, head of the Victoria Paper and Twine Company, Limited, has purchased a fine new residence at 141 Springhurst Avenue, Toronto, and moved into his new home this week. He formerly lived at Dunn Avenue.

No decision has yet been made by the Ontario Government in respect to the application of the Backus pulp and paper interests for an extensive pulpwood concession along the English river, which, together with the limit they now own to the south, would supply pulpwood for the proposed pulp and paper mill at Kenora. Premier Drury this week made the following official statement concerning the matter: Some time ago complaint was made on behalf of the Canadian daily newspapers that the Fort Frances Pulp and Paper Company was refusing to supply newsprint for use in this country and the Government was asked by the press to use its good offices to induce the company to supply Canadian newspapers. The press was represented at the conference. No assurance was given by the Government that any additional concession would be given Backus. Mr. Peter Heenan, the member for Kenora, was present, not representing Mr. Backus or himself, but as the representative of Kenora. As soon as it was brought to the attention of the Government that Mr. Harding, Crown Counsel on the Riddell-Latchford Timber Commission, was representing the Backus interests he was asked immediately to sever connection with that firm and all other lumber companies.

A supreme Court writ has been issued at St. Catharines at the instance of George Mortimer Elson against the assignee for the Journal Printing Company, claiming \$7,212.88. The claim is based on money advanced to J. M. Elson, plaintiff's brother, on behalf of the defunct Journal. In the statement filed G. M. Elson claims that he has been advancing money during a period of six or seven years. When the Journal made an assignment the claimant filed his account but the trustees threw it out.

By a writ issued this week in Toronto the Supreme Court is asked to declare that certain judgments of the Paper Control Tribunal, directing the Fort Frances Pulp and Paper Company, Limited, to make certain refunds to its Canadian customers, are valid, and to direct the payment of these funds. The amount involved is approximately \$122,000, the largest claim being that of the Winnipeg Free Press for \$52,259.81.

Mrs. Arthur Murphy (Janey 'Annek) of Edmonton, has been appointed a delegate to the Imperial Press Conference at Ottawa next month. Mrs. Murphy is president of the Canadian Women's Press Club and

Honorary Secretary for Canada of the Society of Women Journalists of England.

In connection with the collection of fees on pulpwood and timber cut from Crown lands, it is understood that the Ontario Government is considering the inauguration of a new and more businesslike administration of this service. The whole question of scaling and measurement of logs and timber is under consideration at the present time and investigation is being made at mills and other places with a view to collecting data to assist in arriving at a conclusion regarding the best method to be followed. Hon. Beniah Bowman, Minister of Lands and Forests has been on a trip of inspection to the western part of the province and is giving consideration to the new methods about to be inaugurated.

Mr. George Davidson, Toronto, sales manager of the Howard Smith Paper Co., Ltd., has gone on a motor trip through New Hampshire accompanied by his wife and family.

Mr. A. Hobson, of the Toronto office of the Howard Smith Paper Co., Ltd., is spending his vacation at Sparrow Lake.

To carry on the business of engravers, printers and publishers etc., the Edward Press, Limited, has been granted a charter, with head office at Toronto. The company is capitalized at \$40,000.

Additional information to hand concerning the Sorce Falls Company, Limited, which has been granted a charter, indicates that the Kimberley-Clarke Company, of Neenah, Wis., has become largely interested in the proposition. Officials of the company recently visited Toronto and conferred with Premier Drury and the Minister of Forests and Lands in reference to the taking over of 1740 square miles of pulpwood concessions which were granted to the old company three years ago. George F. Hardy of New York is consulting engineer and the company will go ahead at once with the erection of a 75-ton groundwood plant, and a 75-ton sulphite plant, to be followed later by a newsprint plant of 75-ton capacity. The pulp plant is to be proceeded with at once and is expected to begin manufacturing in the fall of 1921. Mr. F. J. Sensenbrenner, First Vice President of the Kimberley-Clarke Co., is the new President of the Spruce Falls Co. and Mr. S. A. Mundy, of Bradford, Penn., is the Vice-President, with J. C. Kimberley, of Neenah, Wis., as secretary. A Toronto office of the company is being opened at 9 College Street, with Mr. Elisha Stewart, Vice President of the old company, and the only Canadian director in the new organization, in charge. The company will buy large quantities of wood from the settlers in the Kapuskasing district, where the mill will be erected.

Mr. John M. Imrie, Manager of the Canadian Daily Newspaper Association, and family, are spending a few weeks at Bolton, Lake Simcoe.

Mr. R. T. Honck, Sales Manager of the George H. Mead Co., of Dayton, Ohio, was in Toronto this week on business.

The London Paper Co., Limited, has been incorporated to carry on the business of publishers, wholesale and retail stationers, manufacturers of envelopes, paper, hardwood boxes, etc., as well as general lines. The capital stock is \$150,000 and headquarters in London. The incorporators of the company are Henry J. Jones and D. H. McDermid, Victor Jackson, Samuel F. Jones and Chas. Tomlin.

A charter has been granted to the Century Bag Holder Co., Limited, with a capital stock of \$40,000 and headquarters in Toronto, to manufacture, sell and deal in bag holders, bags, boxes, chests, wrappers, packing devices made of wood, paper, fibre, metal and other materials. Walter F. Wormley, Thomas H. Goldring and others of Toronto, are shareholders in the new enterprise.

The Woman's Century Publishers, with a capital stock of \$100,000 and head office in Toronto, have been granted a charter to carry on the business of printing, publishing, book-binding and selling and dealing in paper.

Wm. Southam and Sons, Limited, with a capital of \$5,000,000 and head office in Hamilton, have been incorporated to carry on a general publishing and printing business, book-binding, book-selling, stationery, etc. The Southam's, at the head of which is Mr. Wm. Southam, veteran publisher, own the "Hamilton Spectator," the "Ottawa Citizen" and other newspapers in the Dominion, as well as large job printing establishments.

Bird & Son, Limited are erecting a dam at their plant at Port Range, Quebec. Production will be increased 20 to 25 per cent. The contract for construction has been awarded to William P. Bishop, Ltd., Montreal.

Laurentide is again in second position in the standing of the St. Maurice Valley League. On July 25, the Grand Mere boys defeated Three Rivers by fast play in a pitcher's' battle that ended in a 1 to 0 score. The feature was a throw by Brown from centre field, when he returned Major's fly and stopped Dempsey at the plate and spoiled St. Maurice's nearest chance.

The last number of the Spanish River News is largely devoted to the meeting and banquet of the Technical Section. Needless to say, it is a very interesting number, well sprinkled with snapshots taken by the ever-present Coulson. We know who writes the titles for them too!

Application has been made for the admission to the Unlisted Department of the Toronto Stock Exchange of the securities of Western Canada Pulp & Paper Co., Ltd. The company's operations are carried on at Port Mellon, Howe Sound, 25 miles from Vancouver. This company is successor to the Rainy River Pulp and Paper Co., Ltd.

An all rail shipment of 2,200 tons of Nova Scotia coal to a pulp mill 32 miles west of Cochrane on the National Transcontinental east, including freight, about the same as Pennsylvania coal, plus duty, laid down at the same point. This apparently demonstrates that if the duty on bituminous coal remains, Nova Scotia coal can be shipped to southern Ontario at a profit even by rail, and much more advantageously by water.

A permanent rossing and barking plant is being erected at Agate, Ont., by the Continental Wood Products Co., Ltd. This will be followed by a pulp mill. Engineering as well as construction work is in the hands of the Foundation Co., Ltd. Agate is 180 miles northwest of Sudbury, on the Kapuskasing River.

Agate is on the Canadian National Railway, near Kapuskasing Lake.

Harry Buncke, chief mechanical engineer for the Abitibi Company is back at Iroquois Falls, with a bride. That is why he was missed on the Technical Section trip to the Sault. Wonder if he used the Blackford method of selection.

The Safety League of Shawinigan Falls has drawn up a program of action by the town on matters relating to public health and safety. It is not enough to improve mill conditions. It is quite as important that the workman's other 16 hours are spent under safe and healthy conditions.

There is a lot of newspaper opposition in Ontario to the granting of further forest concessions to the Backus interests. A new grant of 2,500 square miles and certain water power rights is asked. Such a grant, together with the lease of 1,860 square miles still undeveloped, would give a reserve of 4,360 square miles. The location of the proposed mill is at Kenora.

An employee at the Hamilton plant of Bird & Son asked how watermelons got the water in them, and was told they are planted in the spring.

Kinleith Paper Mills, Limited, manufacturers of high-grade book, writing and bond papers, are enlarging the capacity of their mill at St. Catharines by increasing the size of one of their machines.

#### Not a Spanish River Subsidiary

In an interview with the Pulp and Paper Magazine, Lieut.-Col. Thomas Gibson, one of the officials of the Spanish River Pulp and Paper Mills, Limited, stated that the Fort William Pulp and Paper Co., Ltd., which is now in process of formation, is entirely independent of the Spanish River Co., and that it was incorrect to refer to it as a subsidiary of that organization, although some of the men connected with Spanish River would be in the new company. Col. Gibson is at present time engaged in the organization of the new company, at the head of which will be Mr. John G. Sutherland, of Dayton, Ohio, formerly sales manager of the Spanish River Pulp and Paper Mills, Ltd. It is understood that Col. Gibson will be the Vice-President of the Company, with Mr. Sutherland as President. Although the company has not yet been gazetted, work has already been commenced on the first unit of the enterprise near Fort William. This will be the groundwood plant with a capacity of 125 tons of groundwood pulp a day. It is expected that the mill will be completed in nine months and it will then be followed by other units, including a newsprint mill. The capitalization of the company, said Col. Gibson, had not yet been determined. Arrangements are now being made for timber and pulp limits in the district.

#### NORTHCLIFFE PAPERS ABSORBENT.

Rumors have occasionally been circulated that the Northcliffe interests were absorbing mills on the North American mainland. A report to that effect is again current and there seems to be an essence of truth in it this time. Associated with the report is the name of the Gulf Pulp and Paper Co., at Clarke City on the north shore of the Gulf of St. Lawrence. Some time ago the Pulp and Paper Magazine referred to this plant as one of the mills which might logically be developed into a newsprint producer. It may be necessary, however, to retain the mill on groundwood for paper mills in England.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, July 24.—While there has been a slight slackening off in the printing trade in consequence of the holiday season, paper dealers report that the demand for most lines of paper is just as strong as ever. The tendency of both retailers and jobbers is to buy wherever possible, for it is generally conceded that there is no prospect of prices coming down. On the other hand, the impression prevails that the market will go still higher before the downward trend sets in and stocks would be added to unstintedly if the goods could be had. The mills, however, are not able to meet the demands being made upon their resources, and deliveries are just as backward as ever. From three to four months would be necessary to catch up with back orders, even if no new business was booked, and while the mills and jobbers are endeavoring to keep their old customers supplied and manage to get a few odd shipments onto the open market, not a few of the jobbers are refusing to take any orders either from old or new customers. The mills are paying on an average of \$15 a ton for coal and the shortage is still causing grave concern. Supplies at many of the mills are nearing the vanishing point and they are only enabled to replenish in small quantities. Cost of manufacture is continually rising. The mills are paying long prices for everything that enters into the manufacture of paper and there is a pronounced shortage of raw materials of every sort. In the meantime the public is insistent in its call for paper which it is impossible to supply in sufficient quantities. Warehouse stocks of book, bonds, ledgers wrapping and in short practically all lines of papers, are exceedingly low and shipments from the mills are reshipped within a few hours after receipt from the plants. With these conditions prevailing as to small supplies and big demands, the prediction is pretty general that the present era of prosperity in the paper trade is destined to last indefinitely. Certainly there is no indication that prices will come down within some months to come and the present under-production furnishes sufficient ground upon which to base the prediction that the coming fall and probably the winter will not see any perceptible change in the general situation as to prices, demand and supply. Many in the trade give the paper trade prosperity another year at least to run and some place the lease of prosperous life in the trade as likely to extend until after the Presidential elections in the United States. No one, however, can be found who will utter a warning based on a possible slump during the coming fall.

### Newsprint.

Although the publishers are being well looked after as far as their regular supplies of newsprint are concerned, very little of the commodity finds its way into the open market, although there is a great demand for it. As high as 14c. per pound has been paid within the past few days for a carload of flat sheet news and one Toronto jobber considered himself lucky in getting a small lot at 13½c.

### Pulp.

The consumption of pulp and the lowness of the available stocks is greater at the present time than at any period since the era of scarcity set in, according to the statement of the sales representatives of one of the big pulp mills. It is stated that hardly any woodpulp has been sold during the past week owing to the scarcity, although some transactions in ground wood have been made at \$150 a ton, f.o.b. mill. Bleached sulphite is quoted at from \$190 to \$200 in American funds and unbleached is being sold in small quantities at \$175. All of the paper manufacturers complain of the difficulty in getting pulp supplies and of the high prices they have to pay for the small quantities they succeed in lining up.

### Bristol Boards.

Most of the cheaper grades of Bristols, which are obtainable in Canada, are being supplied fairly freely and the jobbing houses do not complain of any great shortage. Imports of the better grades from the States, however, are coming through very slowly, and orders placed last April are only now beginning to come in. According to reports received from the American mills by Toronto jobbers, the scarcity of Bristols in the United States continues and the mills are booked up for some months ahead. The shipments that are coming in now are pretty well all placed and there will be very small surplus stocks, if any, when the orders placed with the American mills three months ago are filled.

### Onion Skin.

One Toronto jobber on receipt of an enquiry from a customer concerning the possible early delivery of 150 reams of onion skin, wired a U.S. house and received the reply that the order could not be filled for four months. This, and other lines of import stuff, could be handled with profit by local dealers if it was possible to get delivery, but comparatively little is coming through and as a consequence dealers are losing a lot of profitable business.

### Kraft.

Kraft paper and kraft pulp remain unchanged in price and the mills are booked up to October and November, with the result that the jobbers are not taking any orders for kraft paper at the present time. One of the big jobbing houses in Toronto states that they have to be well content with average shipments of about a ton of kraft paper a day, whereas they used to handle any where from five to ten tons a day. It is almost impossible to get the commodity from the mills now and what is obtainable, is coming through in dribbles.

### Wrapping Papers.

According to Mr. F. L. Ratcliffe, President of the Ratcliffe Paper Co., Ltd., who has just returned from a visit to the Canadian paper mills, there is no easing off in the situation as far as wrapping papers go. The mills are still sold up several months ahead and with low stocks in the jobbing warehouses and deliveries very slow the situation is anything but satisfactory. The slackening off in the retail demand for

wrapping papers, usual at this time of year, has not come this year and the jobbers are receiving many more orders than they can conveniently handle. Increased prices are looked for but in the meantime the prices of the past ten days prevail.

**Book Papers.**

With 16c. a pound being paid for No. 1 S.C. book and an anticipated price as high as 19c. in the near future, book paper jobbers are doing business under a severe handicap as to shortage of supplies. Coated paper is about the most reasonably priced book paper commodity and this also can be had at 16c. a pound, which, when the operation of coating is considered, is looked upon as a reasonably low price, when compared with the same price for ordinary book. The jobbers say that what shipments of book paper they are able to get are immediately turned over and barely reach the warehouse before they are shipped out to waiting customers. Two big shipments of book paper reached Toronto this week from the Provincial Paper Mills and they were very quickly absorbed by the jobbers and printers.

**Box and Mill Boards.**

Box board manufacturers are exceedingly busy and are unable to turn out enough of the product to anywhere near meet the demand. The mills are experiencing difficulty in getting the necessary pulp supplies. The prices that have been prevailing during July will, it is expected, hold good during August.

**Rag and Paper Stocks.**

Dealers in rag and paper stocks report business brisk, although roofing rags are moving slowly and there is comparatively little demand for this commodity. The demand for cotton cuttings is good and prices in this department, and several others, remain firm.

**Rag and Paper Stock Prices.**

	Per Cwt. F.O.B. Toronto
No. 1 shirt cuttings	\$19.00—\$20.00
No. 1 unbleached cotton cuttings	\$16.00—\$16.50
No. 1 fancy shirt cuttings	\$13.00—\$13.50
No. 1 blue overall cuttings	\$13.00—\$13.50
Bleached shoe clip	\$15.00—\$15.50
White cotton hosiery cuttings	\$16.50—\$17.50
Light colored hosiery cuttings	\$13.50—\$14.00
New light flannellette cuttings	\$12.50—\$13.00
No. 2 white shirt cuttings	\$12.50—\$13.00
City thirds and blues (repacked), No. 15	\$3.50—\$4.00
Flocks and satinettes	\$2.00—\$2.50
Taylor rags	\$2.00—\$2.25
Gunny bagging	\$2.25—\$2.50
Manila rope	\$7.00—\$8.00
No. 1 white envelope cuttings	\$7.50—\$7.75
No. 1 soft white shavings	\$6.50—\$6.75
White blanks	\$4.75—\$5.25
Heavy ledger stock	\$3.75—\$4.25
No. 1 magazine	\$3.50—\$3.60
No. 1 book stock	\$2.75—\$2.90
No. 1 manilas	\$3.50—\$3.75
No. 1 print manila	\$2.25—\$2.50
Folded news	\$2.00—\$2.25
Over issue, news	\$2.25—\$2.50
Kraft	\$5.00—\$5.50
No. 1 clean and mixed papers	\$2.00—\$2.15

Spanish mills, to the number of twenty-five, make all kinds of paper and consume about 65,000 tons of various kinds of pulp per annum. It should prove a valuable market for Canadian producers.

**NEW YORK MARKETS**

New York, July 24.—Seasonal quietness exists in some branches of the paper market and yet there is by far a greater volume of trade activity than usually prevails during mid-summer. Consumers have let up in their buying to an extent, still demand for most grades of paper is running well in excess of available open market supplies, and in no direction with the exception of spot lots of newsprint have prices declined. In fact, the tendency of values continues strongly upward, and such changes as have been recorded lately have been practically in every instance toward higher levels.

Probably the strongest end of the market at present is in book paper. Local jobbers report that it is very nearly a waste of time trying to get prompt shipments of any grade of book paper. About the only orders mills will consider are those making no definite specifications regarding deliveries and at a price basis prevailing at time shipment is made. Magazine publishers frankly admit being short of supplies. There is hardly a periodical in the States that is not obliged to limit the size of editions and the number of copies printed. Publishers are conserving in every possible way, thus indicating that they have come to the firm conclusion that additional supplies of paper are going to be hard to obtain for months to come. Prices on machine finished book range in the neighborhood of 18 to 19 cents per pound, and these prices are mainly nominal. Mills have practically no stock to offer for prompt shipment and about the only prices obtainable are those which manufacturers or jobbers opine paper is worth provided it can be found available. Super book paper is quoted nominally at 20 cents and higher, and there is little doubt that buyers would readily absorb sizable tonnages as the basis if they could get paper.

Fine papers are also in a very strong market position. Mills are operating at maximum or at close to full capacity and are mostly foreshold for months to come. Prices are gradually climbing to higher levels. Mills are having to grant increased prices for raw material, while the volume of demand, and the large part of it remaining unfilled, has its influence on market values. Jobbers in New York have virtually no stocks of bonds and ledgers and are finding it next to impossible to augment their holdings, for the reason that as fast as shipments arrive from mills the paper is immediately distributed among anxiously waiting customers.

The newsprint market shows little change. Prices on spot lots of news in standard rolls have eased off a trifle, sales at as low as 11.50 cents a pound having been recorded, but offerings are decidedly limited as regards tonnage and holders are not pressing customers to buy. There is a firm belief in the trade that the fall will witness a tightening up of the spot newsprint market again and those concerned having stocks unsold are mostly content to keep out of view as sellers for the present in the anticipation of receiving in the autumn the top prices recently quoted. There is no reduction of operations at newsprint mills. Manufacturers are producing as large tonnages as their machines will turn out and the great bulk of the output is moving in consistent fashion to contract customers. This is the time of the year when advertising in daily newspapers drops off and consumption of newsprint consequently is lessened, which fact is the reason for the quieter demand for print paper in the open market.



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INQUIRIES SOLICITED.

Wrappings of all kinds are in strong demand. One reason for the brisk call for kraft wrapping is said to be the closing down of manila mills because of a scarcity of raw material, with the result that buyers have flocked into the kraft market. Prices on No. 1 domestic kraft are firm at around 12 cents at mills and all the supply to be had is meeting ready buyers at about this basis. Tissues rule quotably steady and are moving in good volume. Demand is not quite as voluminous as it was a short time ago but little stock is accumulating and the market presents a firm technical condition.

The board situation is marked by strength. Box-makers are commencing to cover fall requirements and demand is daily picking up, while with mills outsold for several months and unable to take care of the fresh demands made on them, everything seems to point to further advancement in quotations. Plain chip board is quoted at \$115 to \$120 a ton at mills and is hard to get in sizable tonnage at these or higher prices. News board is firm at around \$125 per ton.

**GROUND WOOD.**—The ground wood market is firm. There is no increase in visible supplies and the few straggling lots that come into the market from time to time are commanding top prices. About the lowest named in any corner of the trade is \$140 a ton for freshly ground spruce pulp of prime quality, and sales have been made at \$150, and, according to reliable reports, at even higher levels. From present indications, prices on ground wood are still a good ways off from the top heights they give promise of attaining during the next several months. Consuming mills are using up supplies as fast as they become available, and accumulations are practically negligible. When demand for paper broadens, as it invariably does in the early fall, the probabilities are the inordinate demand for ground wood that is likely to ensue will run prices up to undreamed of levels.

**CHEMICAL PULP-WOOD.**—Probably the most important development in the chemical woodpulp market has been a strengthening of the Scandinavian market. After a period of about a month's duration when the market in Norway and Sweden held steady with very little fluctuation in prices, values there are again sharply on the uptrend, and importers say that virtually every quotation received from the other side shows a further advance from the prices previously called. Prices on nearly every grade of Scandinavian pulp have soared to a point where importers are well nigh unable to compete in the domestic market here. About the lowest at which No. 1 foreign unbleached sulphite can be imported to sell in the American

market is 10.50 cents on the dock here, while the scattering of quotations coming forward on bleached sulphite involve mainly pulp of secondary quality for which sellers on the other side demand around 17 to 18 cents a pound. Scandinavian kraft pulp is held at prices equivalent to 8 cents landed here, while even ground wood in Sweden is priced at a cost to local importers of \$125 to \$130 per ton ex dock on this side.

The demand for domestic chemical pulp has eased up slightly. Consumers are not quite so anxious to buy, yet prices, particularly on sulphite, remain firm and seem to be steadily undergoing a hardening process. Newsprint sulphite is selling freely at 8 to 8.50 cents a pound at mills, while easy bleaching sulphite is quoted at 9.50 to 10 cents, bleached sulphite at nominally 12 cents and domestic kraft at 7.50 to 7.75 cents.

**RAGS.**—The rag market is in an irregular condition. Some grades are held with pointed firmness while others are available to buyers at almost any prices within reason that are offered. High grades, notably new cuttings, are decidedly scarce and dealers are holding them at strong prices, with the result that buyers find it necessary to pay the figure asked to get supplies. Roofing stock and some other medium or low qualities, on the other hand, are weak and are repeatedly declining to lower price levels. There have been purchases of No. 1 roofing rags this week by mills at as low as 2 cents at shipping points, while plentiful supplies are to be had at a quarter of a cent more. Old thirds and blues are quotably easy and are offered freely by packers at around 4.25 cents f.o.b. shipping points. Old whites are a bit softer in value and are quoted at around 13 cents for No. 1 repacked stock. New white shirt cuttings, washables, flannelettes, new silesias and similar grades, however, are firm, with business reported done in No. 1 white shirt cuttings at 23 cents delivered mills, in No. 1 washables at 11.50 cents delivered and in new light flannelettes at 16 cents delivered.

**PAPER STOCK.**—Old paper stock of practically every grade excepting books and magazines rules firm in price and there have been slight advances in some directions. Possibly the strongest item at present is flat folded newspaper. Several leading consumers of folded news are actively in the market for supplies and are granting fancy prices, as high as 2.50 cents delivered mills, or in the vicinity of 2.25 to 2.30 cents at shipping points, having been paid. Shavings also are in ready demand and are fetching around 8.25 cents f.o.b. New York for No. 1 hard whites and 7.25

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to 7.50 cents for No. 1 soft white shavings. Because of the economy practiced by print shops, the production of shavings is light and packers are cautious about accepting orders covering large tonnages and are insistent on full asked prices. Kraft paper is in strong demand and steadily rising in value. There have been sales of No. 1 old kraft at close to 6 cents a pound f.o.b. New York, and most sellers are now demanding this price. White blank news cuttings are selling at the record-breaking figure of 6 cents New York. Old books and magazines are largely neglected by mills and are freely available at 3 cents at shipping points.

**OLD ROPE AND BAGGING.**—The market for old bagging is very nearly demoralized. There is little demand of worth while character emanating from consuming quarters and No. 1 scrap bagging is available at 2.75 cents a pound f.o.b. New York and probably at lower levels. Gummy is quotably off at around 3 cents per pound, and roofing bagging is offered at 1.50 cents at shipping points with few takers in sight. Old rope is steady at a quotable basis of 7 to 7.25 cents per pound for No. 1 manila rope at shipping points. There is a fair demand against contracts but mills are doing little new buying.

#### TRADE INQUIRIES

448. *Flours, grain, lumber, paper, preserved food products.*—A firm in Piræus, Greece, with offices at Corfu, would buy on its own account the foregoing articles, or act as representatives for Canadian firms.

457. *Paper and textiles.*—A firm of commission agents at Athens, Greece, would like to open up correspondence with Canadian exporters.

458. *Floor, hardware and paper.*—A firm at Athens, Greece, would be disposed to enter into relations with Canadian exporters.

500. *Industrial chemical and pharmaceutical products, raw material for cotton mills, paper mills and soap manufacturers.* An important firm in Genoa, Italy, are anxious to enter into negotiations with Canadian houses desiring to open up business in Italy.

509. *St. John codfish, wood-pulp, codfish and seal oil, pure lard and backs.* An important firm of commission agents in Genoa, Italy, are most anxious to enter into negotiations with Canadian houses desiring to open up business with Italy.

515. *Wood pulp.* A very old Milanese firm anxious to enter into relations with Canadian firms exporting woodpulp.

550. *Newsprint.*—A Brazilian firm of importers, who state that they sold last year over 4,000 tons of newsprint paper, most of which was of Canadian manufacture purchased in the United States, wish to import directly from Canadian manufacturers for own account, shipped by direct line from Canada.

551. *Paper, hardware, cutlery, barb wire, etc.*—An active and reliable Brazilian firm in Juiz de Fora, State of Minas Geraes, Brazil, whose port is Rio de Janeiro, wishes to import Canadian paper, hardware, cutlery, cement, barb wire and other products. Payments would be made against documents at point of origin.

554. *Paper.*—A company trading in the far East wants Canadian supplies of newsprint paper and paper for envelopes and books. Quotations on samples, prices and deliveries.

565. *Paper.*—A Glasgow firm ask to be placed in touch with exporters of paper of all kinds, with a view to either buying or selling on commission.

574. *Stationery.*—An old firm in Trinidad desire correspondence with Canadian exporting firms in the stationery trade.

595. *Cardboard.*—A Glasgow firm ask to be placed in touch with exporters of cardboard.

596. *Box and woodpulp boards.*—A Liverpool firm ask to be placed in communication with exporters of box and woodpulp boards.

597. *Newspaper, etc.*—A Liverpool firm ask to be placed in touch with exporters of unglazed white newspaper in sheets and reels, glazed white printing paper in sheets and reels, unglazed colored printing paper, down to subst. D/C 12 pounds and upwards, and glazed colored printing paper down to subst. D/C 17 pounds and upwards.

598. *Tissue paper.*—A Liverpool firm are interested in importing unglazed and M.G. tissue paper, white and coloured.

619. *Paper cartons.*—The manager of a large bakery in St. John's, Newfoundland, wishes to be put into communication with Canadian manufacturers of paper cartons.

NOTE: For particulars, address Department of Trade and Commerce, Ottawa, giving the number of the inquiry.

#### NOT CANADA PAPER BOX CO., LTD.

An error on page 789 in our last issue is unfortunately confusing. The Canadian Paper Board Company, Ltd., is the correct name.

# P. A. P. A.

## SCREEN

Pulp and Paper Mill Accessories, Limited  
MONTREAL, Canada

# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., August 5, 1920

No. 32

## TABLE OF CONTENTS

### Editorial—

A fall forestry meeting	823
Absurd and untrue	823
Who makes Eagle brand?	823
The International Number	824
To make more pulp more cheaply	824

### Special Articles—

Advantages of liquid sulphur dioxide in sulphite pulp manufacture	825
Wages and labor in the U.S. paper industry	829
Fables from mill practise	832

### Miscellaneous Information—

If he won't learn, fire him!	824
Advice to bathers	828
The principle of profitable production	828
Proper lighting pays	831
What the employment manager is	831
Book Review—"Papermaking and its Machinery"	833
How Gutenberg invented type	834
Review of recent literature	836

### News of the Industry—

Papermaking materials in Germany high in price	828
Howard F. Weiss (portrait)	831
Rome had paper shortage	833
A new resource map of Canada	831
Hon. Honoré Mercier (portrait)	831
Comparison of paper prices (chart)	831
United States notes	835
Promise of fine meeting for T.A.P.P.I.	837
Pulp and paper news	838
Industrial accidents in Ontario	839
Five hundred celebrated 10th birthday	839
Foresters met at Grand Mere	839
New World's Paper Mill Directory	839
British would buy world	839
Saguenay's first annual report	842
Writing paper exhibit at Albany	844

### The Markets—

Canadian trade conditions	840
U.S. mills made more paper	842

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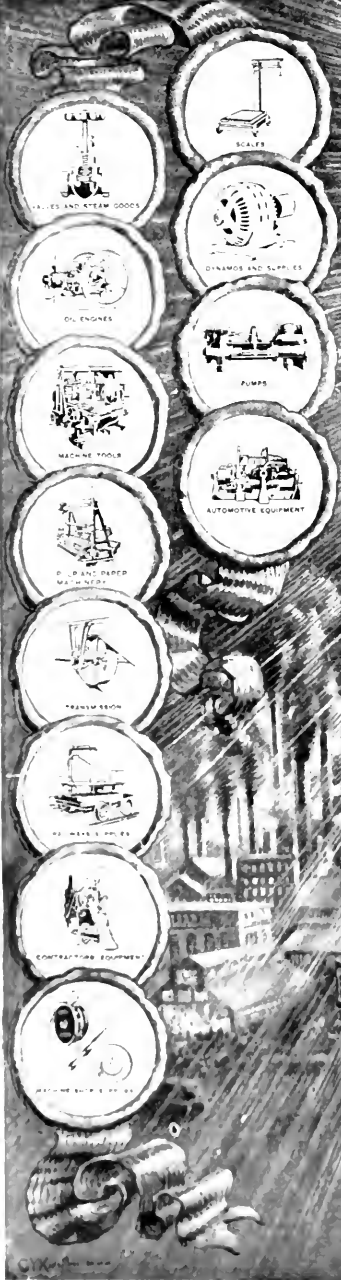
Official Journal of the Technical Section of the Canadian Pulp and Paper Association.

J. NEWELL STEPHENSON, M.S., Editor.

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for. Subscription to any address in Canada, United States and British Empire, \$5.00 yearly. Other Countries Postage Extra. Single copies, 15 cents.

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## EDITORIAL

-:-

*A FALL FORESTRY MEETING.*

No summer meeting of the Woodlands Section of the Pulp and Paper Association was held this year. There was good reason for this. Many of the leaders in forestry matters in Canada are in London attending the Imperial Forestry Conference. While this important event is fresh in the minds of the delegates and before interest on the part of others has flagged, it would be well to have a meeting in Canada to hear reports from those who went to London.

Canada has the only extensive tracts of softwoods in the Empire and there will be an increasing demand on these forests for lumber and pulpwood. It is important that Canadians get a clear conception of what the demand is likely to be so as to prepare best to meet it. There is no question but what a more intelligent policy than the good one we have now must be instituted **generally** if we are to be depended upon as a source of forest products for more than a very limited time. A comprehensive policy for the whole Dominion must be planned by provincial, federal and individual co-operation, so that all may work on the same basis and in order that forest using industries may have hope of a future existence—there is no Heaven for a pulp mill.

*ABSURD AND EXTRIVE.**(By the Associate Editor.)*

For gross departure from the truth as well as for its complete absurdity, we have seldom come in contact with a statement to compare with one published in last week's *Editor and Publisher* (New York) and purporting to have been telegraphed to that journal by General Felix Agnus, described as the publisher of the Baltimore *American and Star*, and prefaced by the remark that the Canadian Export Paper Company has notified that they will not supply those papers with newsprint in 1921. Here is what the General is reported as having said:

"I am advised that the Canadians have been advised to cut exportation to the United States, all their products going to the Dominion, England, Australia, New Zealand, South Africa and other English colonies. I understand that the government's action is not altogether pleasing to the interests of Canadian paper manufacturers, but they have been forced to accept. The drastic conditions will prove very serious to American publications which had faith in the Canadian product.

"I am informed that Mr. Steele, general manager of the Canadian Export Paper Company, is now in England endeavoring to secure a modification of the arbitrary Canadian Government ruling."

The facts are, as everyone conversant with the paper industry knows, that no restrictions are now being imposed upon the exportation of Canadian paper to the United States and none are in contemplation. The Canadian Government has made no "arbitrary ruling," nor has it advised Canadian paper manufacturers to divert their shipments from the States to England, Australia and other British countries. They are free to send their shipments wherever they like.

Mr. Steele's visit to England is not for the purpose of "securing a modification of the arbitrary Canadian Government ruling" which has never been made, nor has anyone in England any authority to deal with such a ruling if it had been made or to have any concern over its enforcement or non-enforcement.

Some Canadian newsprint manufacturers recently entered into an agreement with the Canadian Government to supply certain Canadian publishers, with their paper requirements for the last half of this year, involving a total tonnage of approximately 3,500 tons. This may have necessitated some slight readjustment of foreign shipments. There is, however, no compulsion and no interference whatever with exports of newsprint from Canada to the United States. Canada is today exporting newsprint to American publishers at the rate of about 700,000 tons a year, or more than 80 per cent of the entire Canadian production.

The mischief in such foolish statements as that referred to lies in the fact that they arouse resentment against Canada in the minds of ignorant or uninformed readers and lead to stupid and unnecessary threats of "retaliation" such as were so freely and so needlessly voiced in Washington when the pulpwood situation was under discussion. They do incalculable harm to both countries.

*WHO MAKES EAGLE BRAND?*

A correspondent in Paris wishes to know who makes "Eagle" brand pulp. The Pulp & Paper Magazine will be glad to have this information so that we may advise our friends of the name and address of the producer.

### THE INTERNATIONAL NUMBER.

Apparently the description of the International Number of Pulp and Paper Magazine in the issue for July 22 was not sufficiently explicit. Some subscribers are wondering why they have not received a copy. It will, perhaps, be a disappointment to know that they will not receive a copy unless we receive a dollar. The publishers are sorry that this is the case, but the facts of the matter are, that we could not print enough copies for the extensive distribution to possible future trade channels, which we felt to be our best contribution to the success of the industry, and also to supply each one on our large list of subscribers. In fact, it was difficult for the mill to give us enough paper for the edition printed. By referring to the contents, as given July 22, on page 774, it will be seen what subjects are covered. The full list of exports of pulp and paper appeared in the regular issue last week, and the article on imports will appear shortly. The excellent 14 page article on the "Manufacture of Sulphite Pulp," by H. G. Spear, has been reprinted and may be had as a 16-page pamphlet at 75 cents. The article by Guy Tombs on "How to Get the Goods to the Customer," will be used some time in a regular issue, but it will not be possible to reproduce the fine descriptions of individual mills that made the most striking feature of the International Number. A dollar is little enough for this number, which is well supported by the many complimentary letters received.

### BACK NUMBERS OF "PULP AND PAPER" FOR SALE.

A friend of ours has volume 13 of the Pulp & Paper Magazine (1915) complete except for issue No. 3, bound in full leather in two parts; also volume 14, numbers 1, 2, 3, 5, 8 and 9. These are for sale and offers will be passed on to the owner.

By the way, our own copy of volume 11 (1913) has not been returned yet.

### COBWEBS.

A despatch from New York to a Montreal paper states that the Canadian Paper Export Association—meaning the Canadian Export Paper Company—will divert 70,000 tons of newsprint in 1921 from the American market to British consumers. A Canadian statistician figures the 1921 production as probably 170,000 tons more than the present, so there is more than twice enough to take care of the diversion mentioned, even if this is as great as stated. American newspapers are large now, and they will hardly be starved with an additional 100,000 tons of paper. Getting scared will not help so much as getting careful.

Five hundred guests attended the 10th birthday party of the Forest Products Laboratory at Madison, Wis., to do honor to the precious infant. This is showing proper respect for the conservation of the forest.

### TO MAKE MORE PULP MORE CHEAPLY.

There are other reasons than progress toward economic independence for the use of liquid sulphur dioxide in the manufacture of sulphite pulp. The possibility of using the sulphur dioxide from the treatment of sulphide ores of copper and nickel will reduce or eliminate a troublesome waste product of the smelter and enable the pulp mill to produce pulp more cheaply and to get a greater yield. Such is the conclusion to be drawn from the article on the next page.

The map in this issue shows that within convenient shipping distance of the principal Canadian smelters are sulphite mills which could make good use of liquid sulphur dioxide. Mr. Edwardes indicates methods by which this material can be recovered from smelter fumes and mentions the advantage of using it in the pulp mill.

The ore fields about Sudbury, Ont., seem the most important source of sulphur in Canada at present, although operations in the lead field in the Gaspé district of Quebec may figure in the future, and the British Columbia and Manitoba sulphides also present possibilities.

Preliminary investigations have been made with regard to the use of liquid sulphur dioxide which might be recovered at the rate of more than 50 tons a day at Copper Cliff, Ont. The principal difficulty in the way of making the proposition commercially feasible seems to be the freight rates asked by the railways, due to the classification of the material with explosives. The rate mentioned as obtaining in Washington is said to be satisfactory to the Canadian smelters. We understand that there is no return freight charge on empty cars for liquid chlorine, and the same should hold for sulphur dioxide.

Reference might be made to the Pulp and Paper Magazine for December 18 1919, at page 1091 and July 1, 1920 at page 694. It seems that something will be done and should be done along this line in the near future.

### IF HE WON'T LEARN, FIRE HIM!

A very unfortunate accident which occurred recently in one of our Canadian paper mills should serve as a lesson to our third and fourth hands when lifting reels from the floor to the reel stands near the drum. It appears that in lifting a reel and trying to place it in position on the stand, the reel did not seat properly in the bearings.

The third hand tried to improve matters by giving the stand a push but of course this was of no avail. So he "yanked" the rope controlling the valve of the pneumatic hoist. Of course the hoist jumped up, but in doing so the fingers of the fourth hand were badly crushed between the chain and the reel. If this man had not lost his temper and had used the machine as he should have i.e. first of all opened the valve gently, this accident would not have happened. It only goes to show that some people have their minds everywhere but on their work.

This is the second demonstration of this fellow's thoughtlessness, as some time ago he started a wire on one of the paper machines while a man was sewing same. The latter was only saved from certain death by his ability to clutch on to the Deekle strap pulley shaft while passing underneath.

Think of the other fellow and keep your temper is the moral of the above.

# Advantages of Liquid Sulphur Dioxide in Sulphite Pulp Manufacture\*

By VANCE P. EDWARDES

Engineer in Forest Products, Forest Products Laboratory, Madison, Wis.

Since the last meeting of the Technical Association more or less interest has been displayed in the use of liquid sulphur dioxide in the manufacture of sulphite pulp. This paper was prepared with the idea of presenting such facts which are now available on this subject.

The production of liquid sulphur dioxide from smelter smoke has long been recognized as a possibility, but previous to the world war no liquid sulphur dioxide from any source was produced in this country. Prior to 1914 the Forest Products Laboratory was using liquid sulphur dioxide obtained from Germany in cylinders of approximately 200 pounds capacity. It was some time after the institution of the blockade before we were able to obtain the liquefied gas in this country. There are now, however, at least two concerns manufacturing this material from elemental sulphur, though upon a small scale, so far as pulp manufacture is concerned, and one smelter producing something in the neighborhood of fifty tons of liquid sulphur dioxide per day.

Fumes from smelters operating upon pyritic ores carry anywhere from 0.5 to 3 per cent. sulphur dioxide in the gas stream emanating from the main stack. However, from certain of the smelting operations, such as sintering, roasting and converting gas of much higher concentration is obtained. Gas from this source is naturally selected for liquefaction inasmuch as high concentrations of sulphur dioxide require less total amount of gas per pound of product.

The process employed follows rather closely the procedure outlined by Hamish and Schroeder and patented by them in Germany. The patent, however, expired sometime ago. The flow sheet and following description will serve to clear up the main points at least. The gas is first cooled, then passed through dust scrubbers which remove nearly all of the suspended solids and much of the sulphuric acid mist. In modern plants the Cottrell electric precipitator would very satisfactorily handle this step of the process. After cleaning, the gas is passed into absorption towers where as strong as possible a solution of sulphur dioxide and water is made up. In actual operation the strength of this solution tests in the neighborhood of 1 per cent. The sulphur dioxide is next recovered from the water solution by the application of heat and agitation, is cooled, dried and compressed to 60 to 75 pounds, and cooled again to 20 Cent., at which temperature it is liquefied. Another method patented by Moulin and Vardini<sup>2</sup> comprising the direct cooling and liquefaction of the entire gas stream but has, as far as known, never been put into practice. The great disadvantage of this process lies in the enormous amount of inert gas which must be handled by the compressors. Other methods are that of Pictet, where sulphur dioxide is produced by the action of molten sulphur and sul-

phuric acid. This method was used to some extent in France, as was that of Melsens and Pictet, of freezing sulphurous acid solutions.<sup>3</sup> The solution of the sulphur dioxide in nonaqueous solvents, such as soya bean oil, has been recently patented in this country<sup>4</sup> and another method where the carrying media is a silica jelly is being developed.

It is particularly difficult to figure costs on any plant at the present time and especially one of this type; so much depends upon local conditions but an estimate which we feel is sufficiently accurate to be used as a starting point is \$3,000 per ton of liquid sulphur dioxide per day. Manufacturing costs are also uncertain, but will probably not exceed \$8 per ton, including interest and plant depreciation, but not charges accruing from the purchase of tank cars.

Tank cars of the type required will cost not less than \$7,550 with a loading capacity a trifle over 3,800 U. S. gallons weighing 10.4 lbs. each. Depending upon the distance and the number of transfers necessary, the number of tanks required will vary. Assuming one transfer on a total haul of 150 miles, with 3 day service in each direction, 9 or 10 tanks would be needed to take care of a steady movement of one car a day. In other words a plant producing 20 tons of liquid sulphur dioxide per day would need 10 cars. No figures are available on the rate of depreciation of these tanks but interest charges alone amount to 75 cents per ton while figuring a ten year life adds \$1.25 a ton more.

For purposes of calculation it is safe to assume that this commodity will carry the same rate as sulphuric acid or 15 to 18 cents for a 150 mile haul. An actual rate applying on the west coast is 12½ cents a hundred for a 145 mile haul. A slight rebate probably equivalent to returning the empties free, will undoubtedly be allowed the shippers by reason of the private ownership of the cars. (Said to be no return charge on chlorine cars. Ed.)

Cars suitable for transporting liquid sulphur dioxide are described as class V tank cars and the detailed specifications can be seen on page 33 of the specifications for Tank Cars as published by the Master Car Builders Association and revised in 1918. For purposes of general information the following abstract will doubtless suffice:

- Tank.—60 inch inside diameter,  
28 foot length.
- ¾ inch flange steel lap welded. No caulking permitted.
- Test.—To stand hydrostatic pressure of 300 pounds per square inch.
- Dome.—Cast steel dome cover, with 1¼ inch loading and unloading valves and a safety valve set at 200 pounds.
- Drain Plug.—To be provided in bottom and closed from the inside.

\*Presented at the fifth annual meeting of the Technical Association of the Pulp and Paper Industry, New York, April 14, 1920.

<sup>2</sup>Jour. Soc. Chem. 1912, p. 128.

<sup>3</sup>Molinari's Industrial Inorganic Chemistry, p. 245.  
<sup>4</sup>Richter & Moore, U.S. Patent 1,315,189; see also Paper Industry, Oct. 1919, p. 536.

Valves.—To be of material not subject to destruction by the lading.

Insulation and Jacket.—Tank to be insulated with four one inch layers of cork or board or other approved material. Insulation to be covered with 1/2 in. riveted steel jacket.

The value of liquid sulphur dioxide for acid making and its advantages in cooking are to a certain extent unknown quantities, though it can certainly be assumed that it is worth in excess of its equivalent weight in sulphur. That is, if sulphur costs \$24 a ton at the mill liquid sulphur dioxide is worth more than \$12. Neglecting any of the chemical advantages due to the use of liquid sulphur dioxide, it is estimated that mechanically the decreased handling charges and simplified operation alone would permit \$15 being paid for this material.

In addition to simplicity of operation and control, we feel that liquid sulphur dioxide has other and more important advantages over elemental sulphur when used in acid making. These may be briefly enumerated as follows: Freedom from sulphuric acid and sublimed sulphur; elimination of burners and coolers; smaller piping necessary and that of iron; stronger acid and shorter make-up time due to the more concentrated gas, and the advantage which would be gained in the summer by the acid plant being independent of the cooling water. With the exception of sulphuric acid and acid strength, the other points have been considered in the above estimate.

Sulphuric acid most frequently causes a loss of twenty pounds of sulphur per ton of pulp in addition to the lime which is precipitated out. On the above basis this amounts to thirty-five pounds of calcium oxide per ton. The material loss from these items alone can easily amount to 35 cents a ton of pulp made, and in many cases is doubtless more. In addition to actual monetary loss, indirect, and more serious losses are incurred due to the cost of cleaning the acid system and piping of precipitated lime, and the rapid depreciation of such equipment. A saturated solution of clear cooking acid can carry about twenty pounds of calcium sulphate in the liquor per ton of pulp. This is precipitated at cooking temperatures and could easily form a protective coating over the ends of the chips, effectually plugging the pores, and seriously retarding penetration by the cooking acid, thus causing unevenly cooked pulp. Doubtless, everyone has noticed "egg shells," which appear at times in the finished sheet. These spots are calcium sulphate.

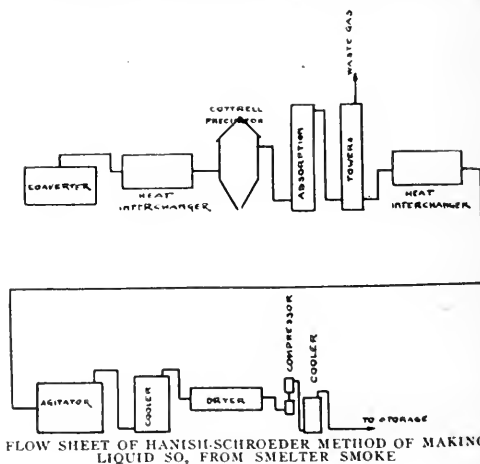
In pulping woods carrying even small amounts of pitch, the precipitated calcium sulphate offers a nucleus around which the pitch may collect and examination of pitch taken off the couch guard board will show it to consist in the main part of mineral matter.

If the waste liquor is to be used for ethyl alcohol production, it has been found that sulphuric acid has a retarding effect upon the amounts of sugar formed. This is possibly contrary to what would be expected from the ease with which wood is hydrolyzed by sulphuric acid in the production of alcohol from wood waste.

The effect of increased gas concentration upon the speed of reaction and strength is well known, but

A. S. Cosler, "Burner Gas Cooling" Paper, 2:148, p. 19.

deserves reiteration. With a gas concentration of 100 per cent and at 20 Cent. and atmospheric pressure, the maximum amount of sulphur dioxide which can be dissolved in water is 10.8 per cent. With burner gases testing between 16 per cent and 17 per cent, approximately one-sixth or only 1.8 per cent free sulphur dioxide could be made. In addition, acid is usually made under a vacuum, thus further reducing the possible acid concentration. Before going further, I wish to explain the terms used above: By free acid in this case is not meant the usual mill test "free," but true free sulphurous acid. As an example,—an acid which by the mill tests analyzes 4.0 per cent total, 2.6 per cent free, and 1.4 per cent combined, actually has the following composition: 4.0 per cent total, 1.2 free and 2.8 combined. That is, the total amount of sulphur dioxide present is 1 per cent, sulphur dioxide in free sulphurous acid, 1.2 per cent and that combined with the bases 2.8 per cent. It would be possible then to make up an acid under atmospheric pressure and 20 Cent., using liquid sulphur dioxide to the follow-



ing approximate composition, as indicated by the mill test. Total 13.2 per cent, free 12.0 per cent and combined 1.2 per cent. In comparison with this, using a 17 per cent gas at 16 Cent. and atmospheric pressure, the limit of solubility was reached when the mill test showed 4.0 per cent total, 2.8 per cent free, and 1.2 per cent combined.

Assuming that it was not possible for any reason to use all liquid sulphur dioxide in the acid plant it still would be very advantageous to fortify the burner gases with this material. In such a case it would probably be best to introduce the sulphur dioxide into the burner gas stream at the beginning or the coolers, thus obtaining the cooling effect of the expanding gas. Most important, however, would be the advantage derived from the increased acid plant capacity without increased absorption equipment.

Griffin, M. K., "Sulphur Dioxide Absorption Systems," Paper, February 13, 1918, p. 64.

Baker, E. R., "Theory and Practice of Acid Making," Paper, February 13, 1918, p. 24.

P. A. Paulson, "New Absorption Apparatus," Paper, February 13, 1918, p. 170.



In acid making, then, we have several factors, the effect of which can be reasonably expressed in dollars and cents, and others which I feel to be of greater importance but which are difficult to estimate.

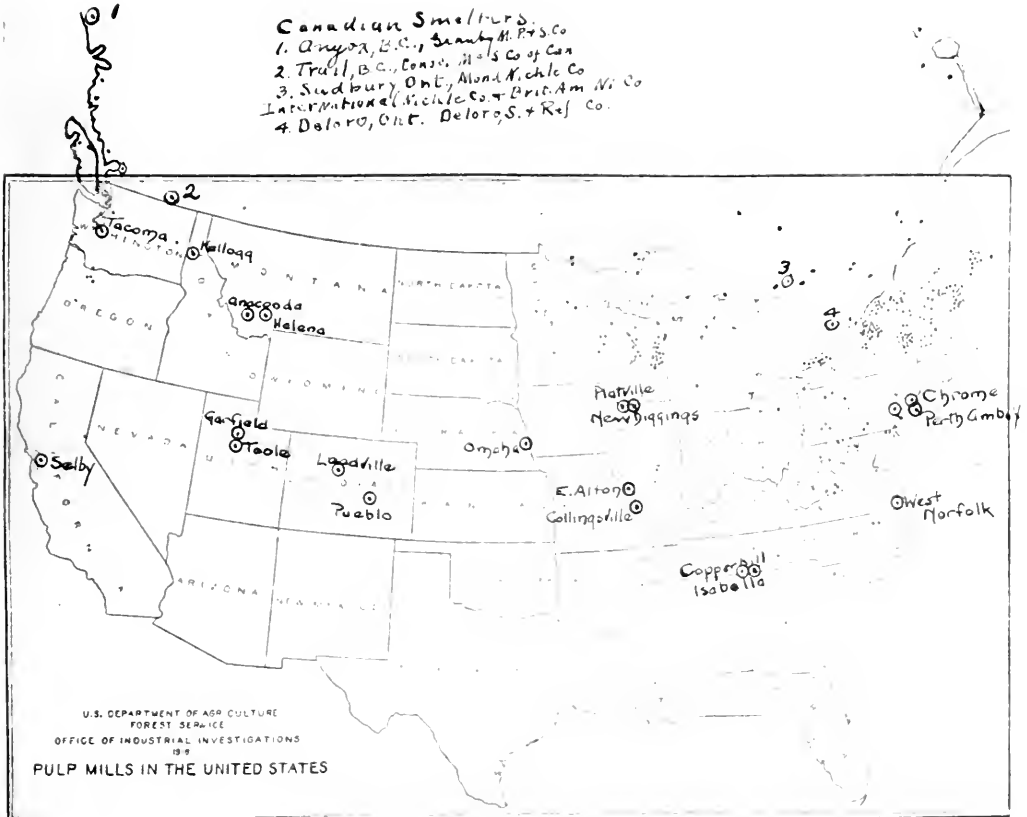
The advantages arising from the use of stronger acid in cooking have been repeatedly proved. What the effect of cooking with an acid of 10 to 15 per cent total sulphur dioxide concentration means, I cannot definitely say. It would be expected that increased yield due to more even penetration would be obtained, together with a shorter cooking time and lower bleach consumption. Such experiments as we have made indicate that with an acid of double the sulphur dioxide concentration than that usually employed, the time was decreased by 25 per cent and the yield increased by 10 per cent based on normal yields. While these figures remain to be confirmed, they will serve as a basis for calculating the saving effected. With a digester making two cooks a day a reduction of 25 per cent in the cooking time would add three cooks a week to the mill output. The increased saving due to greater yields would amount to about 100 pounds on a cord of wood, or you would be getting 1,100 pounds for the cost of 1,000 pounds. In the case of a 10-ton digester, the weekly output due to shorter cooking

time would be increased from 120 tons to 150, while the higher yield would add 15 tons, bringing the total to 165 or a 37½ per cent increase.

Liquid sulphur dioxide upon expansion absorbs about 94 British thermal units per pound, and it is conceivable that the cooling water for the relief lines could be used to supply at least part of this heat. Also, it would be possible to pass the cooled relief gases directly into the acid system, regulating the flow of gas from storage tanks to suit conditions. This, of course would be impossible if the gas supply was obtained from burners. The reclaimed liquor would be collected in a separate tank and there would be no raw acid tanks.

Summer, with the temperature of the cooling water mounting upward, is generally looked forward to by the sulphite man as a time full of trouble. Because liquid sulphur dioxide upon expansion absorbs heat, hot cooking water will not have the same drawbacks as when sulphur is burned.

Again these advantages must be charged the various alterations necessary and the enlarging of the recovery system to handle the greatly increased amount of gas from the digesters. What this may amount to we unfortunately have not the data upon



Approximate location of Canadian Smelters and Sulphite Mills, added to the Editor

which to base any calculations, so must leave the problem to those who are in closer touch with mill conditions.

So far we have considered only the pulp mill side of the proposition. However, it takes two to make a bargain, and the smelter man's wishes must be consulted. He must first be assured of a steady demand for a term of years at a fairly definite price before he can be induced to invest his capital in a plant for liquid sulphur dioxide manufacture. The proposition is new, and technical details will have to be worked out before the plant will be able to operate at anywhere near the highest efficiency. All this costs money and plenty of it, and while the smelters would be very glad to be able to dispose of their waste gases in such a manner in many cases products other than liquid sulphur dioxide can be manufactured. Sulphuric acid, of course offers the biggest field, both as a final product and when used in the production of phosphate fertilizer. Then it is possible to reduce the fumes to elemental sulphur which, however, would probably be a drug on the market. Sulphur when manufactured into sulphuric acid returns at present a greater revenue per unit of sulphur than a price of \$15 a ton for liquid sulphur dioxide would allow, and the manufacturing costs are nearly the same. The argument in favor of the liquefied product is that the sulphuric acid market is subjected to rather violent fluctuations while the pulp mill demand should be fairly constant.

The foregoing has been written with the intent of presenting all sides of the question as fully as possible in order that the pulp men might be informed of the present situation, and enabled intelligently to estimate the price they would be willing to pay for liquefied sulphur dioxide.

Not all mills will be able to obtain a supply of this material, because a relatively small tonnage of pyritic ores is smelted in the pulp-producing centers. The total amount of liquid sulphur dioxide which could be manufactured is in excess of 2,200 tons a day, but by far the greater part of this is produced in the West. The accompanying map clearly indicates the situation with respect to both the present mills and the wood supply of the future. Upwards of three-fourths of the possible production is within easy shipping distance of the national forest areas, several smelters being on the forest borders.

### ADVICE TO BATHERS.

In July the swimming season starts and with it, its normal quota of drowning accidents.

The first good advice we can give here is "LEARN HOW TO SWIM."

The second one is if you can not swim and yet wish to enjoy a refreshing bath be careful and do not go below your depth.

Do not go in the water when prespuring.

Wait at least two hours after a meal before bathing.

Do not dive in rivers and lakes that you don't know.

Do not fool with poor swimmers in the water, they may get excited and get drowned.

Remember that canoeing is a dangerous sport and that locking the boat generally ends in a regretful accident.

Learn that she is interested in forestry.

Will be so to the extent that she always pines to find sport.

### THE PRINCIPLE OF PROFITABLE PRODUCTION.

(Chicago Herald and Examiner.)

Put 100 men on an island where fish is a staple article of sustenance. Twenty-five of the men catch fish. Twenty-five others clean the fish. Twenty-five cook the fish. Twenty-five hunt fruit and vegetables. The entire company eat what thus is gathered and prepared.

So long as everybody works there is plenty. All hands are happy.

Ten of the allotted fish catchers stop catching fish. Ten more dry and hide part of the fish they catch. Five continue to catch fish, but work only part of the day at it.

Fewer fish go into the community kitchen.

But the same number of men insist upon having the same amount of fish to eat as they had before. The fifty men who formerly cleaned and cooked the fish have less to do owing to the undersupply of fish. But they continue to demand food.

Gradually greater burdens are laid upon the fruit and vegetable hunters. These insist on a larger share of fish in return for the larger efforts in gathering fruit and vegetables. It is denied them and soon 20 of the 25 quit gathering fruit and vegetables.

But the entire 100 men continue to insist upon their right to eat. The daily food supply shrinks. The man with two fish demands three bananas in exchange for one of them. The man with two bananas refused to part with one for fewer than three fish.

Finally the 10 men remaining at work quit in disgust. Everybody continues to eat. The hidden fish are brought to light and consumed. Comes a day when there is no food of any kind. Everybody on the island blames everybody else.

What would seem to be the solution? Exactly. We thought you would guess it. For we repeat that you can't eat, buy, sell, steal, give away, hoard, wear, use, play with or gamble with what isn't.

### PAPERMAKING MATERIALS IN GERMANY HIGH IN PRICE

According to a recent issue of *Kolner Zeitung*, the German paper industry is handicapped by the scarcity and increased prices of raw materials. This is particularly true of old paper and rags, which are extremely difficult to obtain, and have reached a price which appears unjustified. The demand is very great and constantly increasing in spite of the fact that consumers believe present prices cannot continue. The cellulose plants in eastern Germany, which have been forced to suspend production for some weeks owing to the shortage of coal, have recently resumed operations, and it is hoped that renewed deliveries of cellulose will help to drive down the prices of old paper and rags. Straw, which is used in large quantities in the German paper industry, is now quoted at 55 to 66 marks per 100 kilos, but this price is expected to fall in the near future. It is hoped that this will also have an effect on the prices of other raw materials. Wages in the industry have risen over 100 per cent since December, and the cost of coal, chemicals, dyes, and other raw materials has risen in like manner. Manufacturers have therefore been forced to increase the price of paper to a point where the demand is seriously affected. Unless the cost of raw materials falls very soon the industry will suffer.

# Wages and Labor in the U. S. Paper Industry

High wage rates and high average working time in the pulp and paper industry is revealed by figures just made public by the U. S. Department of Labor following a compilation of data relating to the industry during 1919, according to Paper, New York.

Cooks, machine men and beater men receive the highest wages, though there are several other departments in which the scale is almost as important, calender men, enamellers, trimmers and acid makers all receiving more than 50 cents an hour.

The range among male workers extends from 35.9 cents an hour for rag pickers to 69.2 cents for machine tenders, and for female workers from 27.4 cents an hour for sorters to 30.3 for calender girls.

A total of 85 mills reported 6,366 workers and 64 mills stated that 1,964 female workers were on their payroll, the great majority of the mills and workers being registered from Maine, Massachusetts, New York and Wisconsin.

Overtime was no exception in many mills, according to the records which show frequently that the employees worked from 100 to 110.4 per cent of the regular time, the acid makers being credited with the highest overtime record with cooks second.

The average number of hours worked per week amounted to 51.4 with the average week day at 8.6 hours.

The report is naturally subdivided into two parts—one dealing with the manufacture of pulp and the other with the manufacture of paper.

In the table published herewith are given the fundamental facts concerning the hours and earnings of employees. The first three columns of the table indicate the sex and occupation of the employees to whom the later figures in the same line refer, and also the number of establishments and the number of employees whose records were used in computing the averages. The rest of the table divides naturally into two sections, the former dealing with hours, the latter with earnings.

## Table in Six Columns

The facts about hours are shown in six columns. The first of these columns shows an average number of hours actually worked during the pay-roll period by employees on one-week pay rolls; the second shows the average number worked by employees on two-week and half-month pay rolls. It will be seen that there is no constant ratio between the figures for the same occupation in the two columns. This is to be explained partly by the fact that the figures for the two columns necessarily come from different establishments, partly by the fact that the second of the two columns contains data from pay rolls varying in length from 11 to 16 days; and partly by the fact that longer pay rolls show a constant tendency toward shorter average hours of actual work.

Two groups of employees are combined in the next column. This column shows the average number of hours per week day worked by the employees in each occupation. The figure obtained for each employee in the occupation by dividing the number of hours worked by him during the pay-roll period by the number of week days in the period, adding the daily hours of all the employees in the occupation, and dividing the sum by the number of people in the occupation. The resulting quotient, average hours worked per

week day, is the number of hours per day that each employee in the industry would have worked if all had worked six days a week and no more, and if all had worked the same number of hours on the each day.

## Average Hours

By multiplying the average hours per week day by six the average figures of the column "Average hours worked per week" are obtained. In the next column are shown the average full-time hours per week in each occupation. By comparing average hours worked per week with average full-time hours per week are obtained the figures in the last column relating to hours, the column headed "Percent of full time worked."

The last four columns of the table relate to earnings. In the first two of these columns are given the average earnings actually received during the pay-roll period by those on one-week pay rolls and by those on two week and half-month pay rolls. These incommensurable figures are changed to a comparable form by reducing them to average hourly earnings, and the result for all the employees in each occupation is shown in the column bearing that heading.

State	Paper and Pulp	
	Establishments	Employees
Alabama	—	—
California	—	—
Connecticut	6	193
Delaware	—	—
Florida	—	—
Georgia	—	—
Illinois	—	—
Indiana	—	—
Iowa	—	—
Kansas	—	—
Louisiana	—	—
Maine	5	1,038
Maryland	—	—
Massachusetts	13	1,549
Michigan	7	609
Minnesota	4	350
Missouri	—	—
New Hampshire	4	337
New Jersey	3	99
New York	11	734
North Carolina	—	—
Ohio	8	741
Oklahoma	—	—
Oregon	3	687
Pennsylvania	9	716
South Carolina	—	—
Tennessee	—	—
Texas	—	—
Vermont	3	281
Virginia	—	—
Washington	2	377
West Virginia	—	—
Wisconsin	7	619
Total	85	8,330

Finally in the last column of the table, are shown the average earnings per week for employees in each occupation. This figure was first computed for each employee by dividing his earnings for the pay-roll period by the number of week days in the period

and multiplying the quotient by six. The sum of the figures thus obtained for all the employees in the occupation divided by the number of people in the occupation is the average earnings per week for the occupation. It is a hypothetical figure. It represents what each employee in an occupation would have earned in a week if all employees in the occupation had earned the same amount each day of the pay-roll period, and if any one employee in the same occupation had earned the same amount per day as any other employee in the same occupation.

**Average Earnings**

A figure for average earnings per week may be obtained by multiplying the average hours per week of an occupation by the average earnings per hour in the same occupation. Weekly earnings obtained in that way may vary considerably from the figures given in the table. Where this variation occurs, however, it is entirely due to additions or subtractions involved in handling continuing decimals. The two methods are fundamentally identical. As men work regardless of the number of hours per day they worked or the amount of work they turned out, actual earnings of employees for any number of hours per week could be readily and accurately changed into corresponding full-time earnings per week. The prevalence of a higher rate for overtime work and a great variety of bonus systems in the industrial world of to-day makes the process of changing actual earnings to full-time earnings laborious and the results problematical.

**Overtime Pay**

Overtime pay presents few theoretical difficulties. If the exact number of hours overtime work and the overtime rate is reported for each employee, it is possible to deduct from the figures reported for total hours and total earnings the overtime hours and earnings, and from the remainders to compute an hourly rate for regular time. But the practical difficulties encountered in attempting to determine the overtime hours and earnings of each employee are great. Overtime hours can not be ascertained by subtracting the full-time hours of an employee for the pay-roll from the hours actually worked by him. Overtime is a matter of daily hours, and over-time hours on one day of the pay-roll period may be offset by less than full-time hours on another day.

It frequently happens there is an employee whose total hours worked during the pay-roll period are less than the full time hours of the amount of overtime to his credit. Moreover, the pay-rolls of many establishments afford no indication of the amount of over-time paid for. The extra pay for overtime is frequently handled in practice by "boosting" the hours. For example, in an 8-hour establishment that pays at the rate of time-and-a-half for overtime an employee who works 10 hours in a day is credited on the pay-roll with 11 hours. By this method the total earnings of the employee for the pay period can be computed by multiplying his total hours, as thus measured by his regular hourly rate. In many cases it is only by

**AVERAGE HOURS WORKED AND AVERAGE EARNINGS MADE, IN THE PULP AND PAPER INDUSTRY IN 1919, BY SEX, OCCUPATION, AND PAYROLL PERIOD**

Sex and occupation	Number of establishments	Number of employees	Average hours actually worked—				Average earnings actually made—					
			In weekly pay period	In biweekly or semi-monthly pay period	Per week day	Per week	Full-time hours per week	Per cent of full time worked	In weekly pay period	In biweekly or pay period	Per hour	Per week
<i>Paper and Pulp.</i>												
<b>MALES</b>												
<i>Paper</i>												
Back tenders	31	757	53.0	102.1	8.7	52.2	50.8	102.8	\$26.88	\$53.76	\$0.516	\$26.63
Beater men	82	459	54.5	108.0	8.9	53.4	51.2	103.3	31.00	53.76	.551	29.44
Calendar men	23	305	50.1	95.4	8.3	49.8	49.3	101.0	25.81	44.34	.504	24.94
Counters	15	43	52.4	92.2	8.4	50.4	50.0	100.8	24.02	40.68	.450	22.56
Cutter men	57	186	54.6	109.3	9.0	54.0	53.7	106.6	23.15	48.26	.428	23.15
Enamellers	7	67	55.1	95.6	8.5	51.0	50.2	101.6	30.15	47.74	.526	26.83
Lintmen	7	65	48.1	83.3	8.3	48.1	48.8	98.6	21.43	36.70	.420	21.43
Machine tenders	81	702	53.4	112.0	8.9	53.4	50.9	104.9	26.60	76.49	.602	36.63
Packers	80	582	52.1	99.0	8.6	51.6	53.2	97.0	25.98	41.04	.427	24.93
Plater men	12	45	50.3	106.0	8.4	50.4	51.4	98.1	23.13	48.81	.460	23.50
Sizer makers	40	53	55.6	134.0	9.2	51.6	54.1	95.4	18.36	38.69	.350	18.36
Rac workers	19	84	51.1	108.1	8.6	54.0	55.2	102.2	24.42	60.35	.440	24.90
Third hands	70	617	52.8	99.2	8.6	51.6	50.0	101.4	23.36	45.66	.447	22.90
Trimmers	38	100	53.4	102.5	8.8	52.8	52.8	100.0	26.71	50.39	.500	26.25
Washermen	16	55	51.4	98.3	8.5	51.0	49.7	102.6	23.00	46.75	.473	23.64
Total	82	4,140	52.8	103.4	8.7	52.2	51.4	101.6	27.68	52.00	.512	27.18
<i>Pulp</i>												
Acid makers	16	106	56.6	118.0	9.4	56.4	51.1	110.4	28.52	56.68	.500	28.12
Barkers	30	214	53.6	99.6	8.2	49.2	51.2	95.2	22.03	41.06	.424	20.95
Blow pitmen	33	125	53.7	108.4	8.07	52.3	50.0	104.4	23.36	46.46	.433	22.90
Chipper men	16	147	55.0	95.2	8.5	53.0	52.4	97.3	23.20	42.36	.431	21.77
Cooks	37	110	55.5	108.4	9.1	54.6	50.5	108.1	31.07	60.93	.555	30.51
Grinder men	55	29	55.5	92.1	8.3	49.8	52.6	94.7	24.14	44.80	.444	23.10
Pressmen	43	627	51.4	109.7	8.3	49.8	50.0	97.8	21.03	45.67	.448	22.40
Screenmen	32	180	52.6	111.2	8.8	52.8	49.7	106.2	22.50	50.79	.433	22.84
Splitter men	20	81	54.0	113.4	9.0	54.0	51.0	104.1	21.56	52.10	.433	22.52
Total	41	2,226	52.9	109.0	8.5	51.0	51.4	99.2	23.93	46.37	.440	23.17
Grand total	85	6,366	52.8	103.0	8.6	51.6	51.4	100.4	26.47	50.08	.490	25.78
<b>FEMALES</b>												
<i>Paper</i>												
Calendar girls	4	43	49.8	81.0	8.1	49.8	51.3	97.1	15.09	30.18	.300	15.09
Counters	15	100	48.7	109.5	8.1	48.6	52.1	93.3	14.72	27.87	.297	14.48
Laborers	58	1,165	47.7	92.0	7.0	47.4	51.5	92.0	13.10	25.11	.276	12.82
Sorters	21	552	49.3	99.2	8.0	48.0	52.0	92.3	13.70	23.42	.274	13.10
Total	64	1,964	48.2	92.9	8.0	48.0	51.7	92.9	13.44	24.75	.277	13.11

obtaining the time record of the employee day by day that overtime hours can be discovered.

#### The Hourly Rate

"The effect of computing full-time earnings by the use of an hourly rate containing an element of extra pay for overtime is obviously to show full-time earnings more or less in excess of the amount that could actually be earned in regular time only. An additional difficulty is presented in the case of employees working overtime and receiving a bonus. It becomes necessary to determine for each such employee how much bonus, if any, he would have received if he had performed no overtime work. Sometimes it is readily seen that the bonus would have been earned in regular time. Such is the case, for example, with an attendance bonus, which is usually paid for regularity of attendance during regular time only. A production bonus, however, can not be so readily apportioned. It will be obvious in some cases that all of it was earned in overtime, but in other cases an approximate apportionment of the bonus between regular time and overtime is the nearest approach that can be made toward determining regular-time earnings.

"Still more hopeless would be the attempt to determine how much of such a production bonus would have been earned in full regular time by an employee who worked less time in the pay-roll period for which the records were copied and consequently earned no bonus for that period. Production bonus systems are very frequently so arranged that an employee of average ability and industry will earn some bonus if he works full time.

"The purpose of dwelling at length upon the impossibility of making an accurate determination of full-time earnings from the pay-roll data of employees under modern conditions is only partly to explain the omission of figures for such earnings from the foregoing table. It is intended primarily to bring out and emphasize the fact that it is entirely inadmissible to compute full-time earnings for employees in any occupation shown in the table by multiplying full time hours per week by earnings per hour. For, while the former figure is definite and entirely adapted to the purpose in hand the latter represents the average actual hourly earnings of employees, some of whom worked more than full time and others less and whose average hourly earnings for the period, therefore, may be either more or less than they would have been if the same employees had worked full regular time and no more."

#### PROPER LIGHTING PAYS

The Illuminating Engineer Society gives the following introduction to the new edition of the Industrial Lighting Code of the State of Wisconsin:

"Insufficiently and properly applied illumination is a prolific cause of industrial accidents. In the past few years numerous investigators, studying the cause of accidents, have found that the accident rate in plants with poor lighting is higher than similar plants which are well illuminated. Factories which have installed approved lighting have experienced reductions in their accidents which are very gratifying.

"Of even greater importance, poor lighting impairs vision. Because diminution of eyesight from this cause is gradual, it may take the individual years to become aware of it. This makes it all the more important to guard against the insidious effects of dim, flicker-

ing light, of sharp shadows, of glare reflected from polished parts of their work. To conserve the eyesight of the working class is a distinct economic gain to the state, but regardless of that, humanitarian considerations demand it.

"Finally, inadequate illumination decreases the production of the industries of the state, and to that extent, the wealth of its people. Factory managers, who have installed improved illumination are unanimous in the conviction that better lighting increases production and decreases spoilage."—From the Canadian National Safety League.



**HOWARD F. WEISS,**  
Former Director of the Forest Products Laboratory, who acted  
as Chairman of the successful Decennial Celebration  
held at Madison, this last week.

#### WHAT THE EMPLOYMENT MANAGER IS.

The U. S. Bureau of Labor has prepared the following in regard to employment managers:

"Description: The employment manager is responsible for the selection, training, education, promotion, transfer, and discharge of shop and factory employees.

"Qualifications: He must have the ability to judge human nature and should have had sufficient experience and training to make it unnecessary to delegate responsibility when hiring men. He must have self-control, and be masterful, yet tactful. He must be fair in dealing with employees and understand his duty to the owners as well as to the employees. He must be conscientious, diplomatic, firm, and have executive ability of a high order. He should have had special training in economics, business administration, industrial hygiene, shop and factory management, statistics and labor problems.

"Schooling: College education or equivalent."—From National Safety League.

## Fables from Mill Practice—4

### Savings Crumbs and Losing Tons

By H. TUESS.

The chemist of the Wake and Doin Paper Company, engaged as usual in burning off his never lessening pile of retention samples heard a prolonged br-r-r-r-r-r-br-r-r-brup-brup-brup. That was the office, acting through Miss Gigglin Pitts, the switchboard operator. "Yep, Oh, Mr. er-er Test Tubes—scuse me, I never can think of your other—I mean your name—Mr. Boutan Doin wants to see you right away."

A few minutes later T.T. enters Mr. Doin's office to find him talking to a sad looking man of about fifty, impinging on a chair, and preventing a straw hat from obeying the law of gravitation by gripping it at the rim with both hands. "Say, Test Tubes, this is Mr. Toopercent Moore, the er-chemist—you said 'chemist,' didn't you Mr. Moore?—of the Puttit Dover Company. He is to make a joint test with you of those four cars of pulp from them that came in last night. He would like to return tonight, if possible."

"Glad to meet you, Mr. Moore, but I am afraid we cannot do that. It will be necessary to unload the central third of all the cars in order to get an adequate sample, and the yardmen are busy. We'll get at it right away, though. Let's go down to the laboratory."

At the laboratory the following dialogue takes place:

"This is the laboratory, eh? Wish I had a place like this to work in."

"What's yours like, Mr. Moore?"

"Oh, just a plain room with scales and an oven."

"Oh, you only test the pulp for moisture."

"Yes, I'm a moisture chemist."

"Where did you study chemistry, Mr. Moore?"

"Can't say that I ever studied it. I was weighing man, and after that shipper. Then I was sick, and after that the boss showed me how to make tests. He said that was all the other chemists did. You got them French weights? I can't use them. I like to use good old American pounds and ounces."

After some little telephoning, a pair of grocer's scales was borrowed—Mr. Moore insisting on examining the certificate of the government inspector on the scales and weights in question.

After they were installed in the laboratory, the two chemists proceeded to the receiving platform, where the cars of wet pulp were being unloaded. It was decided that each should take the first two cars by his own method, and that the test of the next two was to depend on the results obtained.

"I take a piece out here," said Mr. Moore. It was on the felt side, and he took only about half the thickness of the sheet. He said he did this because it was easier. Nothing further was said on this point, but Test Tubes was making notes.

Mr. Moore said he was satisfied when ten laps were sampled. "They're all the same. It's no use taking more. They take too long to dry."

Test Tubes sampled thirty laps, and they returned to the laboratory. The samples were duly weighed, the oven locked, Mr. Moore taking the key.

"How hot do you keep your oven, Mr. Moore?"

"About 125 degrees Fahrenheit."

"But that will not take out all the water! What makes you keep it so low?"

The boss said it was hot enough to dry anything,

because things get dry as chips in the summer, when it never got hotter than 100. I always keep them in until they stop losing weight, so they must be dry."

With some solicitude on the part of Mr. Moore as to burning the pulp the oven was set for 215 degrees Fahrenheit. It was arranged to meet at six-thirty the following morning to get results on the first samples before tackling the balance.

In the morning, the oven was opened with due formality by Mr. Moore, and the samples weighed, after a careful sweeping of tiny crumbs on to a scale whose limit of sensitiveness was a quarter of an ounce. There was a discrepancy of a shade over two per cent in Moore's favor between the two lots of samples.

"I'm sure you heat your samples too high. You see this result confirms our figures."

"I admit, Mr. Moore, that the result on your samples is similar to those billed by your company, but why didn't your samples burn at the same temperature? Why would my samples burn, as you say, and not yours, in the same oven?"

"Well, that IS strange, sure enough."

"Your trouble Mr. Moore is in the sample, not the oven. Your sample only represents the drier side of the sheet."

The other two cars were proceeded with as before. Mr. Moore was persuaded in addition to make a parallel test cutting right through the sheet, at more than one point in each lap, and other tests were made on several laps—cutting strips right through.

The results showed a very reasonable closeness all around except those on Mr. Moore's felt-side only samples which were as before two percent higher.

Mr. Moore left that night. Three days later, Mr. Doin sent for his chemist and showed him the following letter:

Messrs. Wake and Doin,

Wakeville, New York,

"Gentlemen:—Our Mr. Toopercent Moore has returned after making joint test with your chemist on four cars of pulp (our invoice of 3rd instant) and reports that the results substantially verify our billing. We shall be obliged if you will honor in full sight draft, now going forward.

Yours very truly,

Puttit Dover Pulp Company,

S. Nappy Finants,

President.

"But," gasped the mill chemist, "that's all wrong. I explained to Mr. Moore, and made special tests to show him, that his tests as he cuts samples will always be about two per cent high."

"The point is, Test Tubes, that we are not going to stand for this hold-up business any longer. If the Puttit Dover people think we are going to pay for the blunders of that poor fellow they have bullied into testing to save compensation for making him work on an open air shipping platform, they are a long way out. I am going to fight this out. Keep those cars sealed. I am going to have an independent test made, and have it out."

The moral. Ignorance is the foundation of fakes.

The steamer "Lackawanna Valley" arrived in Boston, July 24th, with 1,700 tons of chemical pulp from Finland.

**BOOK REVIEW.**

**PAPERMAKING AND ITS MACHINERY**, by T. W. Chalmers. 178 pages, 139 text illustrations and 6 plates. D. Van Nostrand Company, New York. Price \$8 (U.S. funds).

The author calls attention, to his preface, to the book of information of an engineering nature regarding pulp and paper making machinery. The present book is compiled from material, collected through the courtesy of several English firms making paper mill equipment, published as a series of articles in *The Engineer* in 1915 and 1916.

The book is arranged according to the sequence of operations, and includes the following chapter headings: Introductory; Cutting, cleaning and boiling; Washing, breaking and bleaching; Purifying and pulping; Beating; Refining; The Fourdrinier machine; Fourdrinier driving arrangements; Details of the Fourdrinier; Pulp strainers; Tub sizing; Calendering, cutting and winding; Wood pulp; The coating of art paper; The finishing of art paper; The coating of photographic paper.

The Introduction is a very clear and concise description of the papermaking process, mentioning its history and the character of materials employed.

The machinery described is, of course, all of English make, in fact, it is confined to the products of Bertrams, Limited; James Bertram & Son, Limited; Masson, Scott & Co.; James Milne & Son; Watford Engineering Works; Glossop Ironworks, Mather & Pratt; West End Engine Works, Bentley & Jackson; Boving & Co.; Charles Walmesley and Co. and others are not mentioned, though typical apparatus can probably be adequately described without using pictures of their machines. The book, therefore, gives one the impression of being a composite catalog: there is need, however, for just this very thing.

The book is profusely illustrated and beautifully printed. The description is based on the drawing, or half-tone. Some machines are shown both in perspective and in section. Most of the apparatus shown is typical of the industry anywhere, and the descriptions explain the principal features of construction and mechanical operation, though a few of the machines illustrated will be strange to American readers. Even these may inspire new ideas and will certainly broaden the reader's knowledge. The use of numbers to indicate machine parts would be an improvement, as would also the printing of key words in italics.

Papermakers on this side will differ with the author with respect to some statements of practice, for instance, that rags are boiled in from 3 to 6 hours at a pressure of 20 to 30 pounds per square inch, or that a concentrator of the cylinder (with vacuum and couch roll type) will take 25 per cent of water from stock which, "in common practice, would contain, before concentration, equal weights of fibre and moisture." The only other instance we shall refer to is the table on page 133, in which the composition of common news is given as 10 per cent esparto and 90 per cent sulphite, while in high-class news the figures are 80 and 20 respectively. This occurs in the chapter on wood pulp, but no furnish containing ground wood is given.

This chapter on wood pulp is short, because but little pulp-making equipment is made in England. The pulp drying machine shown is of the Fourdrinier type, very uncommon on this side, though Canada's newest sulphite mill has this type of machine.

In the description of the paper machine, no mention is made of the syphon system of draining the dryers. There is a good table on page 64 giving a comparison of two machines as to speed, steam pressure, power, number and size of rolls, etc. A diagram on page 72 shows how a belt running on cone pulleys may be made to be flat by setting the small end of each pulley slightly past the large end of the other. The Marshall drive is not shown, but the Lumsden belt drive, an electric drive, and a rope and electric drive.

Details of the Fourdrinier machine are quite completely given, though nothing is found on other paper machines, as the Harper, Yankee or cylinder.

Strainers (screens) are given a long chapter, with rather scant attention to the diaphragm screen, but with full descriptions of several revolving strainers.

The chapter on Tub Sizing is extensive. Among the calenders we note a 130 in., 10 roll, super calender. No plater is described. Perhaps they are not used in England. The same may be said of de-inking, or waste paper recovering machinery.

The most striking feature of the book is the portion devoted to the coating of art and photographic papers. From our limited knowledge of the process and observation of mills, this appeals strongly as a fine description, with excellent diagrams.

We are a bit diffident about criticizing, and particularly about calling attention to weak spots. It is easy enough to find flaws in the other fellow's work, but, in pointing out the few we noticed, it should be understood that this is more with the idea of charting a few rocks in a broad expanse of fine and pleasant sailing. There is not a paper mill superintendent or engineer who will not find much of interest and help in Mr. Chalmers' book, and a new idea is cheap at almost any price.

The Pulp and Paper Magazine will be glad to transmit orders to the publisher, or they may be sent direct to D. Van Nostrand Co., 8 Warren Street, New York. On account of the rate of exchange, it is suggested that orders be accompanied by a money order payable to the publishers in New York.

**ROME HAD PAPER SHORTAGE.**

Le Figaro of Paris has unearthed for its readers what it believes is the world's first recorded paper shortage. It quotes from the *Causeries du Lundi* where Sainte-Beuve, translating from Pliny, says that under Tiberius there was such a scarcity of paper in the Roman empire that it was necessary to appoint senators to regulate distribution; in other words, a congressional board of control.

Sainte-Beuve, grown cynical in his day of excessive erudition, books, ink and paper, added:

"How welcome such a shortage would be now! But such things happened only under Tiberius. We cannot hope for like happiness today."

Le Figaro finds Sainte-Beuve refreshing reading, but in view of the situation in 1920, unduly appreciative of Tiberius.

**CARELESSNESS SAID:**

I am not much of a mathematician, but  
I can ADD to your troubles,  
I can SUBTRACT from your earnings,  
I can DIVIDE your attention,  
I can take INTEREST from your work,  
I can DISCOUNT your chances for SAFETY.

**A NEW RESOURCE MAP OF CANADA.**

A "Map of the Dominion of Canada indicating Natural Resources, Transportation and Trade Routes," scale 10 miles to the inch, has just been published by the Department of the Interior.

On this map varieties of mineral, agricultural and fishery resources, and the timber and fur in general are printed in red lettering in their proper locations. The sites of important water powers, developed and undeveloped are indicated, and the lines of all railroads completed up to date are clearly defined.

The resources shown on the map extend from "whales" near Herschel Island in the Arctic to "salt" at the southern toe of the Ontario peninsula, and from the "white whales" of Ungava bay to the fruit lands near Victoria, B.C. An important inset contains 5 circular diagrams, showing the comparative contributions of each province to field crops, commercial timber, developed water power, fisheries and minerals. A sixth diagram displays the proportion of the total exports filled in 1918 by manufacturers and by the five great classes of Natural Resources severally.

The thorough reliability of this map is shown by the caution which ignores probabilities, however promising. The trader, investor manufacturer and economic student will read the map as an open book; its appearance is timely when demand is abnormal and enlarged production a necessity.

The map can be obtained free of cost on application to The Superintendent, Natural Resources Intelligence Branch, Department of the Interior, Ottawa.



**HON. HONORE MERCIER,**  
Minister of Lands and Forests, Province of Quebec.

**HOW GUTENBERG HIT UPON IDEA OF MOVABLE TYPE.**

The Rev. John Roach Stratton of New York in a recent issue of the American tells this story about Johann Gutenberg that is well worth reading.

In the fifteenth century there was a German lad who had the euphonius name of Johann Genefleisch. Translated into plain English this means John Gooseflesh.

It is said that John was one day playing near a pot of boiling dye with which his father was preparing to color some skins.

He had cut the letters of his name from the bark of a tree and was spreading them out to form his name when one of them accidentally fell into the pot of boiling dye. Quickly John plunged in his fingers to rescue the letter.

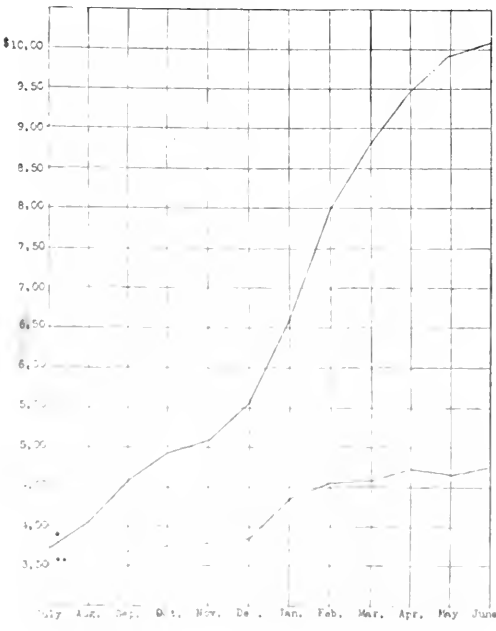
Finding it very hot, he more quickly turned it loose. It fell upon one of the white skins which were waiting to be dyed, and when John lifted the block away he saw a beautiful purple "H" smiling up at him. That was the first letter ever printed upon the continent of Europe.

Whether he admired the marks on the skin, or ruminated ruefully on the marks which his irate father might make upon his own skin because of the accident, we do not know. But we do know that this accident, or something else, started the young man to thinking.

In the year 1450 we find a printing press working in Meintz, under the direction of John Gutenberg, who had changed his name from Gooseflesh by availing himself of an old German law which permitted a child to take his mother's name, instead of his father's if he desired. His discovery of the art of printing revolutionized the world.

P.S.—It has recently been discovered that movable type in metal was used in Korea in 1403.

**GRAPHIC COMPARISON OF PAPER PRICES**



Graphic comparison of average open-market and contract prices per 100 lbs. f.o.b. mill paid by publishers for standard newsprint paper from July, 1919, to June, 1920, inclusive. Courtesy, Federal Trade Commission





# UNITED STATES NOTES

Joseph H. Wallace & Co., engineers, of New York City, have completed plans for the remodelling and enlarging of the building recently acquired by the Standard Paper Manufacturing Company at Richmond, Va. It is estimated that the work of shaping up this addition to the company's plant will cost in the neighborhood of \$500,000 by the time it can be opened for actual operations.

Twenty-eight members of the Midwest Newspaper League have given approval to the organization of a publishers' buying corporation which is ultimately to act for about 400 newspapers in the buying of newsprint. This action resulted from a conference held last week at Kansas City. The league includes publishers in Kansas, Missouri, Arkansas, Colorado and Nebraska. Newspapers, which, according to plans, will be served by the buying corporation have total requirements of 75,000 to 100,000 tons of newsprint annually.

Plans have been laid by the Associated Dress Industries of America for the manufacture of pulpboard and corrugated paper boxes on its own account. A factory is to be erected by the organization and an effort will be made to have it in operation in time to supply containers to the dress trade next Spring, thereby bringing to an end troubles that manufacturers have been having for some time. Long delays in shipments from factories already established and the very high prices asked for the kinds of boxes required are given as the chief reasons for the step the association has taken. Several possible sites in and near New York city are being considered by the association, and orders for the necessary machinery are to be placed in the near future.

Measures to obviate troubles that might arise from a serious shortage of fuel oil and the possible failure of electric power supply are being taken by the Crown-Williams Paper Company at its Camas, Washington, mills. The eleven boilers in this plant, developing about 5,000 horse-power and consuming annually 250,000 barrels of oil will be converted from oil burners to coal. While the machines in the mill are run largely by electricity steam is necessary in the digesters for cooking the stock, for heating purposes and for drying the paper. A 1,000 horse-power steam turbine and generator has just been installed for emergency use when the electric power fails. Changing the boilers over and supplying accessories to meet the change will cost several hundred thousand dollars.

A loss estimated at \$60,000 was sustained by the Ohio Paper Company through the fire which partly destroyed its plant at Miamiburg, Ohio last week. Coming at a time when the company was turning out several large contracts and when considerable material was on hand awaiting shipment, the fire resulted in a serious set-back. Though the management is making every possible effort to rebuild so that operations may be resumed at an early date, a suspension of work for at least three months may be found necessary.

According to John M. Gries, assistant professor of Lumbering at the Harvard Graduate School of Business Administration, the present paper shortage in the United States is due mainly to a greatly increased demand at a time when production could not easily be increased. During the war few pulp and paper making machines were made, and it was impossible to equip plants to meet the growing demand for paper, says Prof. Gries. Considering the distribution of the timber available for pulpwood, the pulp and paper industry was too much centralized in the North and East. To have increased the capacity of many of these plants would unduly have shortened their lives. The obvious way out of the present difficulty, Prof. Gries believes, lies in increased production in the West and South. It is his opinion that no great increase in the production of woodpulp can be expected until more pulp and paper mills are located in these sections. Chief among the reasons enumerated by Prof. Gries for the skyrocketing paper demand is the enormously increased space being given to advertising.

A recent re-organization in Ohio that is causing considerable speculation in paper trade circles there was that of the Crystal Paper Company which has concluded an arrangement whereby it will lease its plant at Amanda in the Miami Valley to the Crystal Tissue Company. The capital of the latter is put at \$1,000,000 in the articles of incorporation filed at Columbus. Z. W. Ranek will serve as its president, W. O. Barnitz as treasurer and E. A. Cahill as secretary. The new company will continue to manufacture the same high grade white and colored tissues as were formerly made by the Crystal Paper Company, and it is reported that the latter retains its charter as a holding company under the present management. It is understood that no changes will be made in policies or employees.

Jason Rogers, President of the Publishers Buying Corporation, this week purchased for members of the association 2,500 tons of newsprint a month at 9 1/2 cents. He has also been offered 1,000 tons a month at 9 cents.

The forest area of southern New England is now about 46 per cent of the total land surface. This is equivalent to 1,750,000 acres of forest land, says the American Forestry Association of Washington. The area forested is apparently on the increase. In 1910 the forested area was estimated at 41 per cent in 1850 at 32 per cent, and in the Connecticut portion of the territory in 1820 as about 26 per cent.

Prosperity is the fruit of labor; property is desirable; is a positive good in the world. That some should be rich shows that others may become rich, and hence is just encouragement to industry and enterprise. Let me him who is houseless, pull down the house of another, but let him work diligently and build one for himself, thus by example assuring that his own shall be safe from violence when built.—Abraham Lincoln.



## Technical Section



### REVIEW OF RECENT LITERATURE

**A.3.—Whorl-flowered bent-grass (*Andropogon muricatus*, Retz) as a papermaking material.** Bull. Synd. Fab. Papier et Carton, No. 1, 48 (Jan. 1, 1920).—Results of tests carried out recently at the French School of Papermaking, Grenoble. This plant is native of India and neighboring countries, but grows in other tropical countries, notably Brazil. The tests were carried out on plants grown in Algiers. The leaves, which are a by-product of the perfumery and basket-making industries, were treated (1) with 7 per cent of NaOH at 4 B under 3 kilos pressure, for 4½ hours, and (2) with 3 B Ca bisulfite acid under 3 kilos pressure, for 4½ hours. The former treatment yielded a pulp having a decided greenish yellow color; the latter a much lighter-colored product, which was easily defibered and bleached yielding 35 per cent of bleached pulp. This contains 20.5 per cent of non-fibrous material, a large part of which would be lost in washing. It greatly resembles straw pulp but is not as strong. It is sufficiently white and opaque to be used as a filler in fine printing and writing papers. The felting power of the fibrous material (expressed as the ratio of the diameter to the length) is 1.50. It is quite possible that material from tropical Asia would yield a higher grade product.

**B.0.—Non-inflammable timber.** J. Ind. Eng. Chem., 12, 82, (1920). The oxylene fire-proofing process for timber consists in submitting the wood in a closed chamber to steaming and vacuum treatment which removes the air and moisture in the pores of the wood and vaporizes the sap water. The wood is then impregnated under hydraulic press, with a solution of fire-resisting chemicals. Finally the water of the solution is dried off and the chemicals in minute crystal form remain embedded in the fibres.

**E.5.—The problem of sulfite cooking.** M.L. and R. Papeterie, 41, 434-8, (Oct. 25, 1919); 487-92, (Nov. 10, 1919); 531-2, (Nov. 25, 1919); 573-9, (Dec. 10, 1919); 616-9, (Dec. 25, 1919).—A brief discussion is first given showing how the strength and temperature of the gas, the nature of the stone, and the height of the the influence the composition of the liquor obtained, and the means of obtaining the desired results. The function of the SO<sub>2</sub> is to split off the lignin from the cellulose by forming a ligno-sulfonic acid, and the CaO combines with the latter, preventing it from recombining with the cellulose. The amount of SO<sub>2</sub> in the liquor should be at least sufficient to combine with the whole of the lignin, and will depend on the method of cooking and on the amount of gas relieved during the cooking. The amount of CaO should be just sufficient to combine ligno-sulfonic acid; deficiency results in imperfect elimination of the lignin and excessive precipitation of CaSO<sub>4</sub> on the fibres and also on the partially cooked wood, there mechanically preventing further action by the SO<sub>2</sub>. The conditions for obtaining good results by direct cooking are: (1) medium sized digesters, not exceeding 10 ft.; (2) a plentiful supply of superheated steam at constant pressure; (3) a strong cooking liquor. It should be conducted as fast as possible to obtain the

maximum action in the minimum of time. Indirect cooking must be conducted more slowly at a slightly lower pressure, and it is not essential to use superheated steam; but the composition of the liquor should be maintained very constant. It yields a pulp which is weaker and dirtier (owing to the precipitation of CaSO<sub>4</sub> on the fibres), but more easily bleached, than direct cooking. Examples of various cooks are given with hourly analyses of the liquor, showing how the above points are borne out in practice. A few of the uses for the waste liquor are briefly described.

**E.0.—Linings for experimental digesters.** Paper, 25, 971, (1920).—A satisfactory lining was obtained by using solid stoneware casting of acid-proof tile 1½-inch thick, the holes being made by a stone-cutter with an air chisel after the casting was in place and backed with cement.

**K.6.—Esparto pulp. A new method of preparation.** Fr. patent No. 118,376, E. Arnaud, France. Papier, 22, 344-5, (Dec. 1919).—The grass is ground by suitable means before being subjected to the action of chemicals. By this means an economy of 50 per cent of the NaOH is effected, and the pulp can be bleached with 6 per cent of bleaching powder. The yield is increased from 38-42 per cent to about 50 per cent. A second grade pulp may be obtained by using the liquor from a previous cook and bleaching with 3-4 per cent of bleaching powder. It then becomes unnecessary to recover the NaOH.

**K.6.—Process for the manufacture of pulp.** F. patent No. 496,613, Feb. 11, 1919. Societe Anonyme des Etablissements A Olier, France. Papeterie, 41, 623, (Dec. 25, 1919).—This process is suitable for the treatment of fibrous plants, such as corn stalks and leaves, esparto, dwarf palm, papyrus, etc. It consists essentially in a preliminary cutting and crushing, followed by steaming, and finally by cooking with NaOH. For lower grade pulp the NaOH treatment may be replaced by a Ca(OH)<sub>2</sub> treatment.

**K.8.—The coloring of paper.** Otto Kress. Paper, 25, 869-75, 917-20, 961-3, (1920). Pulp and paper, 18, 355-9, 289-92, 319-22 (1920).—The various pigments and dyes used in the paper industry are described, together with the manner in which they should be used; and a detailed description is given of the method of determining the tinctorial power of dyes by means of laboratory tests. At the end of the article is given a list of the American made dyes, together with the uses to which they may be put.

**K.10.—Improvement in the sizing of paper.** E. Arnaud. Rev. Univ. Papeterie, 2, No. 12, 7-8, (Dec. 15, 1919).—In sizing the following facts should be borne in mind:—(1) Success does not depend entirely on the quality of the rosin. (2) The method of sizing and the water used in the manufacture of the paper has an important bearing on the success of rosin sizing. (3) The main object is to obtain a maximum retention of the size of the fibers. (4) Proper drying is very important for successful sizing. Owing to the high cost of rosin, proper utilization of all its colloidal

elements is indispensable. This has been obtained by means of the "Glover size."

**K-10.—Substitute for rosin size.** D.R.P. No. 316, 324, Orloff Hansen, Bamewitz, Germany. Papierfab. Bull. Synd. Fab. Papier et Carton, No. 1, 10-1, (Jan. 1, 1920).—Glue is soaked for 12-24 hours in cold water, and then heated to about 60°C and stirred for half an hour. China clay is then added until a very fine Emulsion is obtained; i.e., until there is saponification by the colloidal silicic acid. After stirring for 1½ hour the temperature is quickly brought down to 20-5°C, thereby giving an apparently perfectly homogeneous product which is ready for use. The large amount of silicic acid gives the paper the maximum whiteness, and also gives it bulk and makes it almost incombustible. For tub-sizing it should be added to the stuff at a temperature of about 50-5°C. Under no condition should it be diluted with water before adding to the heater, 100 kilos of dry paper require 5-10 kilos of size.

**K-12. The felting of fibers on the paper machine.** Fr. patent No. 498,971, May 3, 1919. Léon Thiry, Belgium. Papeterie, 42, 211-4, (Mar. 10, 1920). The felting of the fibers is obtained by means of jets of air, water or steam, which are made to impinge on the sheet in process of formation. This method is much more flexible and efficient than the use of vibrations of the wire and possesses the further advantage that it may be used to bring the stock on the wire to any desired temperature or to incorporate color or size with the stock. It may be used independently of, or in conjunction with a vibratory system. A.P.C.

**K-12.—Paper, cardboard, or pulp dryer.** D.R.P. No. 315,028, Carl Schaaf, Falkenstein. Papeterie, 41, 624, (Dec. 25, 1919). Hot gas or steam is led through stacks of rolls, passing from one roll to the next in the stack.

**K-12.—Paper moistener.** D.R.P. No. 305,585, Jan Goebel, Darmstadt. Papeterie, 41, 627, (Dec. 25, 1919).—To prevent excessive moistening of paper as it is being reeled, a circular brush pressing against the roll is given a velocity proportional to the increasing diameter of the roll.

**K-12.—Electric drive in the paper mill.** Barbillion, Directeur de l'Ecole Française de Papeterie. Papeterie, 41, 610-6, (Dec. 25, 1919).—A study of the manner in which various types of motors may be used to obtain the range and constancy of speed required to drive a paper machine.

**K-22.—Paper for wrapping oranges and lemons.** Wochenblatt für Papier-fab., Papeterie, 41, 634, (Dec. 25, 1919).—This paper generally weighs 17-18 g. sq. m. and the best qualities have the following average composition:—white paper trimmings 30 per cent, fine white groundwood 10 per cent, semi-bleached sulfate 20 per cent, unbleached Mischherlich pulp 30 per cent, waste paper 10 per cent, Na Silicate 1 per cent, sulfate of alumina 1 per cent, tale colored with rosin 5 per cent. The addition of tale prevents molding and imparts an agreeable touch to the paper.

**K-0.—Micro-organisms on old papers.** Rev. Univ. Papeterie, 2, No 11, 11, (Nov. 15, 1919). Galippe has examined papers dating back to the 18th and 15th centuries, Chinese manuscripts anterior to the invention of printing, and Egyptian papyrus of about 3000 B.C., and in every case found micro-organisms.

**K-23.—Waterproof paper.** Papier, 22, 358, (Dec. 1919).—The dry paper is passed through a bath containing a hot mixture of the following composition:—

Resin 50 per cent, paraffin, 45 per cent, Na silicate, 5 per cent, the excess being squeezed out of the paper by passing through rolls. The proportions of resin and paraffin may be varied 5 or 10 per cent, but not that of Na silicate.

**K-23.—Waterproof wrapping paper.** Papier, 22, 358, (Dec. 1919).—Prepare a solution of 1000 g. of white soap in 1000 cc. of water containing 100 g. of K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> and (b) a solution of 0.25 g. of glue in 1000 of water. Mix (a) and (b), heat, pass the paper through the solution, then through a pair of rolls, and finally dry. If no rolls are available the paper may be hung up in such a manner that it will drain thoroughly, or better passed between 2 sheets of dry paper.

**K-0.—The decay of paper in hot climates.** Papier, 25, 971, (1920).—In hot climates low grade papers decay very rapidly owing to the chemicals which remain in them, while high grade papers usually fall prey to vermin. It takes an exceptionally high grade paper, such as used to be made in China, to last long. Parchment paper would doubtless be satisfactory as to durability.

**M-4.—Reducing friction loss in transmission.** N. P. Winchell Jr., Papier, 25, 957-60, (1920). Advice as to the manner of eliminating friction losses due to misalignment, bearings, improper lubrication and unnecessary loads.

**R-5.—Machine for dewatering pulp.** D.R.P. No. 311,934, Akt. Karlstade Mekaniska Verkstad, Karlstadt, Sweden. Papeterie, 41, 624, (Dec. 25, 1919). The stock is passed between two rotating rolls of equal diameters, the water passing into the larger roll.

#### PROMISE OF FINE MEETING FOR T.A.P.P.I.

All indications point to a largely attended meeting of the Technical Association of the Pulp and Paper Industry at Saratoga Springs, N.Y., September 1-3, 1920.

Technical papers and reports will be read and discussed during the sessions held on the opening day of meeting, the second and third days of the convention being mill visitation days when the members and their guests will be taken in automobiles to mills and factories at different points in the Adirondack and Hudson River Valley district. The banquet of the association will take place on the evening of the opening day. A number of gentlemen prominent in the pulp and paper industry and mill executives will be present as hosts as well as guests, and the banquet is expected to be a brilliant affair. It will be held at the Grand Union Hotel, which is official headquarters of T.A.P.P.I. for the Fall Meeting. Members should make certain of securing reservations at the hotel for September 1 and succeeding days of the meeting.

#### COPPER TUBES 1 8" TO 12" IN DIAMETER

Messrs. Allen Everitt & Sons, Limited, of Smethwick, Birmingham, England, whose Canadian representatives is the Imperial Trading Company, Montreal, maintain a stock of over 20,000 copper tubes alone, from 1 8" diameter to 12" diameter and can fill any ordinary order for tubes in three or four days after receipt at works.

It is worthy of note that they supply almost all the pulp and paper mills in Great Britain, Sweden, Norway and the continent, with their brass and copper tubes, and have already done considerable business in Canada.

# PULP AND PAPER NEWS



During a severe electrical storm last Friday night, July 23rd, a serious fire occurred in the finishing room of plant No. 2, Garden City Paper Mills Co. Ltd., caused by lightning striking some electrical appliances and resulted in a lot of damage by fire and water. Operations have already been commenced in restoring the building and plant and the management hope that in a few weeks this portion of the mill will again be in running order. The brick chimney of the paper mill Plant No. 1, which is a good half mile away across the other side of the canal was also struck by lightning and all the bricks on two sides were ripped off. In the city of St. Catharines there were four fires resulting from the effects of this storm, which was unusually severe in that locality.

A settlement has been effected between J. J. Carrick and the Hydro-Electric Power Commission in regard to the pulp mill at Campbellford and the Bruton limits. By the settlement it is understood that \$225,000, deposited by Mr. Carrick on account of the purchase price, has been returned. A further sum has been paid to Mr. Carrick by way of compensation. Prior to this settlement, Mr. Carrick made application for a fiat to sue the Hydro-Commission to compel them to fulfill the conditions of the bargain his lawyer made for the purchase of the Campbellford mill and the Bruton limits.

Circulars were mailed this week to the shareholders of the Kipawa Company, Limited, asking them to expand their holdings of the company's stock into the common stock of the Riordon Company, Limited, as soon as possible. It will be remembered that the Kipawa Company, Limited, was one of the companies which went to make up the Riordon Company, Limited. The stock will be exchanged in the proportion of one share of Kipawa Company for 1½ shares of Riordon stock. As neither of these issues are on a dividend basis at the present time, no transfer or record dates have been set. The Montreal Stock Company is in charge of the exchange of stock.

Toronto printers have decided to press upon the publishers a demand for a further increase in pay. The printers had previously asked the publishers for a conference, but were told that this could not be granted till next Fall. The Toronto printers are working on a wage schedule that has two years to run, and despite the fact that publishers were not bound to make any increases during the life of the contract, voluntary increases, to the number of three, have been given. The grievance of the men lies largely in the fact that other trades in the newspaper industry have been given an increase in which the printers do not share. The men's demand is practically a twenty per cent increase. This would be applicable upon the present wage scales of \$36.00 a week for day workers and \$48.50 a week for night workers.

The approval by the Ontario Government of the sale by the Dominion Government of certain disputed G

T. P. lands near Fort William to the new pulp company being organized by Lieut.-Col. Thomas Gibson, Toronto, and others, is causing some criticism to be directed against Premier Drury. The pulpwood lands in question are located on the G.T.P. right-of-way and were given by the Ontario Government to the railway as land grants under a patent that was supposed to provide for the return of the lands to the Dominion. The province has laid claim to the lands, and as the Dominion Government contests it, a fight for possession seems certain. It is stated that the agreement with the pulp company fixes a price of about 40 cents a cord for the wood, and it is complained that the pulpwood was sold without asking for tenders. Brig.-Gen. Hogart of Port Arthur, in a letter to Premier Drury on the subject, contends that the fair market value of the pulpwood is \$2.00 a cord.

Owing to the shortage of paper in Toronto some of the contracts to supply text books to the schools of the city will not be completed in time for the opening of the schools, and pupils may have to wait some time before they can get their books. One publisher, under contract to supply the schools, said that he had had paper on order for the books for several months, but had been unable to get a sufficient quantity, although he was putting all his available stock into text books. In the meantime the publishers are under bond to supply the books by the opening of the school term, although the bond companies take the ground that the clause exempting fulfillment if the contract was affected by the war, let the publishers out.

Elaborate preparations have been made by the local committee for the entertainment of the Imperial Press Conference in Toronto. The party will arrive in Hamilton on Monday, August 9th and will motor from that city, arriving in Toronto between 5 and 6 p.m. A banquet will be given in their honor that evening at the King Edward Hotel by the City Council. On Tuesday the delegates will be taken on a drive around the city and at noon the Governors of the University of Toronto will entertain them at luncheon, following which honorary degrees will be conferred upon four of the delegates by the University. On Wednesday the Harbor Commissioners will act as hosts when a luncheon at the Royal Canadian Yacht Club will be a feature. In the afternoon the delegates will leave for Guelph commencing a tour of Southern Ontario and returning to Toronto for the second week of the exhibition.

Mr. H. B. Donovan, sales manager of the Canada Paper Co., Ltd., has moved from his old home on Bank Street, Toronto, and is now occupying his new residence in Oakville.

Mr. D. F. Robertson, general manager of the Canada Box Board Co., Ltd., was in Toronto a few days ago calling on the firm's customers.

The Minister of Lands and Forests of Quebec has completed arrangements with the Dominion Air Board

for the patrolling of the province's forests by airmen. The mapping of the vacant lands in the northern part of Lake St. John will also be undertaken, thus surveying an area of 127,000 square miles.

E. S. Oliver, a chemist who has been investigating processes for the extraction of turpentine from the Douglas fir, claims to have perfected a process. He has obtained a number of resin leases from the B. C. government and intends to commence operations at once.

### INDUSTRIAL ACCIDENTS IN ONTARIO

The reports of accidents to the Ontario Workmen's Compensation Board do not indicate much falling off in the general industrial activity of the Province, although the war-time industries have ceased, says the Canadian National Safety League.

The total number of accidents reported during the first half of 1919 was 19,811, the corresponding figure for 1918 being 22,702. The amount of compensation awarded was \$1,676,049.88 during the first half of 1919, as compared with \$1,672,362.84 during the first half of 1918, the amounts being almost the same, although the number of accidents was a little less. This indicates a higher rate of wages.

The accidents reported during each month of the half year are as follows:—January, 3,471; February, 3,164; March, 3,343; April, 3,112; May, 3,201; and June, 3,520.

The number of fatal accidents reported during the half year was 215, as against 212 for the corresponding half of 1918.

### FIVE HUNDRED AT CELEBRATION OF 10th BIRTHDAY.

The decennial celebration of the Forest Products Laboratory held at the University of Wisconsin in Madison, July 23 and 24, was attended by more than 500 nationally known leaders in the lumber and lumber-by-product industries and the program included addresses and papers by many of the greatest experts in their lines. Addresses by Gov. Philipp of Wisconsin and President E. A. Birge of the University opened the decennial on July 23. Reforestation, the utilization of waste, conservation measures and other vital forestry problems were the subjects mainly under discussion. It is expected that definite action may result from the discussion of a plan for forming post-graduate schools to train forestry graduates in the use of wood products, giving them expert training in the handling of wood and an insight into the various methods of manufacture. Several speakers declared that the bill before Congress to appropriate \$1,000,000 to find a substitute for woodpulp is unwise, that the money would be spent to a better purpose if made available to forest products laboratories for their development.

Charles M. Schwab told Princeton University undergraduates what he thought were fundamental requirements for a successful life: First, unimpeachable integrity; second, loyalty; third, a liberal education in the finer things of life, of art, of literature, as man needs imagination and these are the sources of it; fourth, make friends and whatever misfortunes one has in life, just laugh; fifth, concentrate and do not be afraid of mistakes; sixth, go at your work, which means to give the best that is in you.

### FORESTERS MET AT GRAND MERE.

About thirty Foresters from all parts of Canada and the Eastern States attended a three-day conference at Grand Mere last week.

Mr. G. C. Piche, chief of the forest service of the provincial Government, briefly addressed the foresters at the luncheon on Friday at the Laurentide Inn, and outlined the forestry policy of the new premier, Hon. Mr. Taschereau. He said that in general the policy of Sir Lomer Gouin in dealing with the paper industry would be followed, and declared the new premier would make an announcement shortly relating to the classification of the size of the various kinds of wood that could be legally cut.

The foresters spent most of their time while here at the Proulx Nursery of the Laurentide Company, where experimental reforestation work is being carried on under the direction of Ellwood Wilson, head of the Forestry Department of the Laurentide Company.

### NEW WORLD'S PAPER MILL DIRECTORY

In the 29th edition of the "Paper Makers' Directory of all Nations," just published by Dean & Son, Ltd., 160a Fleet St., London, Eng., for 1920 (990 pp., Demy 8vo., price 28s. net), the mill entries affected by the rearrangement of the map of Europe will be found grouped under their new geographical headings in respect of Australia, Czechoslovakia, Estonia, Finland, France, Germany, Hungary, Italy, Latvia, Lithuania, Poland, Russia, Ukraine, and Yugoslavia, as indeed they were also in the last edition, although it was only published a few days after the signature of peace with Germany.

Arranged entirely alphabetically, the three main features of the book comprise: 1. British Paper and Board Mills and many useful lists connected with the Paper Trade of the United Kingdom; 2. Paper Pulp and Board Mills in foreign Countries and the Colonies; 3. Production of the Mills of all Countries classified together in one alphabetical list of nearly 400 trade designations; to these are added a Buyer's Guide of special value and use to those having control and equipment of mills, factories, etc.

With the expansion of the export trade, especially in pulps, Canadians will find much of value in this directory. Orders may be placed through the Pulp and Paper Magazine at \$5.00 per copy.

### BRITISH WOULD BUY WOOD.

Mr. Jost, of the Jost Pulpwood Co., recently told the Pulp and Paper Magazine, when asked regarding an opinion as to the pulpwood situation, that pulpwood keeps soaring and sales are frequently reported at a price considerably in excess of \$50. Some dealers have received serious propositions from British paper mills for export of pulpwood due to the shortage of groundwood and sulphite pulp.

The Paris Wholesale Paper Company, has opened business in all lines of paper, with offices and warehouse in Paris, Texas. The nearest paper house is in Dallas which is 100 miles to the south; in the other directions there's no local paper house within 200 miles. This territory is as thickly settled as most any other in the Southwest and has some of the largest printing lithographing plants located in it. The new company will be glad to make more mill connections.



**CANADIAN TRADE CONDITIONS.**

Vacations are epidemic in the paper trade and seldom has this period come when the mill man could leave for a holiday with greater peace of mind. Mills are busy and will stay so for some time without hustling for orders in hot weather. It is true that trade is a little quiet because buyers also are resting. They need the rest, having been laboring hard to find paper and satisfy customers and they will need some surplus energy for the strenuous times that appear to be ahead. Transportation is difficult now and this should be the easy time. One pulp man made the statement that coal cars are about the only available conveyances for pulp. In spite of the temporary decrease in correspondence, a lot of material is moving on orders.

**Pulp**

The ground wood situation still dominates the wood pulp market. Trade is a bit quieter at present, but the tendency is for a considerable strengthening by the last of August, as the mills are all sold up now. Most of it goes to the United States. As high as \$150 is being paid, but \$130 to \$140 is a common range on contracts.

Chemical pulps are also commanding respectful attention. All grades of sulphite are tight. News grade is valued at \$160 to \$175 with easy bleaching and bleached pulps correspondingly higher. Sulphate pulp is quoted at \$150 to \$155.

There is a tendency to place as much pulp as possible in England, which is no doubt very good policy.

**Newsprint**

Many ask but few are answered who inquire about newsprint. There is supposed to be a softening in the spot market, but New York dealers are asking 12½¢. More than one consumer would call that reasonably firm. It is not probable that there will be much change in the situation for some time. Other grades are firm, and mills that are on the fence—those which normally make other grades, go back to their own when newsprint is unprofitable, keeping on the side where the most money lies. The hope that new production will ease things up is not very bright. Price Book will probably be the first to have a new march going, and its product is understood to be placed in England. Old customers of times "before the war" can now be reached with better shipping facilities, and their demand is another strengthening factor.

**Book Papers.**

The feature of the week in book paper circles was the advance in coated book stock. Jobbers were in receipt of letters from the coated paper mills advising them of an advance of 2½¢ a pound on the product effective July 27th. Prices, of course, and those of book papers generally, are all subject to the prices prevailing at date of shipment. The present price of coated paper with the increase added is 18½¢, and it is predicted that this price may not last long before circumstances compel another rise. During the

week representatives of English book paper firms were in Toronto with samples, but with a quotation of nearly a shilling a pound, few, if any orders were booked. There was no serious attempt to do business by the English firms, for there is a shortage over there as there is in this country, and the mills in the Old Country are up against pretty much the same conditions as prevail in Canada. The visit of the English salesmen was more in the nature of a "feeler-out" for the days to come in the more or less distant future when the world paper trade will have reached a normal state and when it is hoped to resume export of paper from England to Canada. At the present time hardly any British paper is coming into this country, although a few shipments of gummed paper have been received of late. In the present state of the paper market it is not thought possible that the English makers can compete with the Canadian manufacturers.

**Box Board.**

With the mills paying from \$150 to \$200 per ton for groundwood pulp and a proportionately high price prevailing for coal and other supplies, the paper board manufacturers are having a rather hard time of it supplying the wants of the consumers. In fact they are not doing it. Most of the mills are several months behind with their orders and are unable to meet the big demand that is being made on their resources. A box board manufacturer told the Pulp and Paper Magazine that the fuel problem is getting more acute and that what small quantity of coal is available is at fancy prices. A peculiar feature of the situation is that paper makers are getting very little coal on their old contracts made some months ago and are now compelled to go into the open market and buy from the same firms with whom they have contracts, and at the open market prices.

**Wrapping Papers.**

Keeness of demand and the same scarcity of stocks that have characterized the wrapping paper trade for the past several months continue to prevail. Remarking that the paper trade is an index to trade in Canada generally, a leading wrapping paper jobber went on to say that the demand for wrapping paper not only was keeping up, but the turnover continues to increase month by month and still the demand cannot be met. It was pointed out that when the boot and shoe men were selling their goods they demanded paper and the same way with the grocer and the dry-goods merchant. There is no question about it. There is a tremendous demand for all classes of wrapping paper and bags and the theory of the dealer quoted is that business generally in Canada will likely keep pace with the present era of prosperity in the paper trade. The dealer further expressed the belief that the paper business would not right itself until 1922 when the new machines on order now are delivered and running and the machines now working on newsprint are released for the wrapping paper and other demands.



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INQUIRIES SOLICITED.

### U. S. MILLS MADE MORE PAPER

Every grade of paper reported on by the Federal Trade Commission for June, 1920, shows a marked increase in production over June, 1919. The total increase is 159,342 tons for the month. From the amount of over-lapping it appears that more mills are making more than one grade than last year.

Standard news shows a gain of nearly 19 per cent, book paper of 31 per cent, paper board of 41 per cent, wrapping 20 per cent, fine papers 20 per cent, tissues of 35 per cent, and felts and building of 50 per cent over June, 1919. It is significant that the figures for June 1919, are very nearly the same as the average for 1917, 1918 and 1919.

Stocks of all grades except newsprint, felts and building and hanging, decreased during the month. Stocks of all grades reported by manufacturers at the end of June amounted to 170,877 tons, including the stocks at terminal and delivery points. In addition to these stock jobbers and publishers reported newsprint stocks and tonnage in transit aggregating 194,373 tons.

Comparing the stocks on hand at the domestic mills on June 30, with their average daily production based upon the combined production for the years 1917, 1918 and 1919, the figures show that:

Newsprint paper mill stocks equal slightly less than 6 days' average output.

Book paper mill stocks equal slightly less than 8 days' average output.

Paperboard mill stocks equal slightly more than 6 days' average output.

Wrapping paper mill stocks equal slightly more than 9 days' average output.

Bag paper mill stocks equal slightly more than 5 days' average output.

Fine paper mill stocks equal slightly more than 25 days' average output.

Tissue paper mill stocks equal slightly less than 12 days' average output.

Hanging paper mill stocks equal slightly more than 4 days' average output.

Felts and building paper mill stocks equal slightly more than 12 days' average output.

Miscellaneous paper mill stocks equal slightly more than 19 days' average output.

Total paper mill stocks of all grades equal slightly less than 9 days' average output.

Newsprint is the only grade of which the United States is a heavy importer. Practically all of this tonnage, the value of which amounted to \$1,981,784

for May, 1920, is imported from Canada. The value of the exports of newsprint in May, 1920, amounted to \$629,719 which is slightly less than 13 per cent of the newsprint imported.

Book paper, fine paper, wrapping paper, and newsprint were the principal grades exported, the combined value amounting to \$3,149,983 for May, 1920.

The value of the total imports for all grades was about 1 per cent less than for April 1920, and more than 37 per cent greater than for May, 1919. The value of the total exports for May, 1920, was \$834,400 less than the value of the exports for May, 1919, and was \$264,475 more than the value of the imports for May, 1920.

The time lost in June, 1920, was less than half of the figure for June, 1919, and in each case paper board claims more than one-third the loss.

### SAGUENAY'S FIRST ANNUAL REPORT.

The 1919 and first annual report of the Saguenay Pulp and Paper Companies and its subsidiaries, which company was formed a year or so ago to take over the several companies represented by the North American Pulp Paper Companies Trust, has made its appearance. The report, which covers the year ended December 31 last, indicates an improved position of the new company over the old, gross revenue in the period having amounted to \$5,416,545 as compared with \$4,268,368 as shown in the 1918 report of North American Pulp. After bond interest net earnings amount to \$464,636 against \$442,227 for the old company in 1918, while surplus of \$33,551 compares with \$38,005 for North American Pulp in 1918, the showing being lowered by way of creation of a reserve against depletion of timber limits of \$263,001, and writing off of surplus of coal used in alterations of the Chandler mill, of \$149,067.

In his report to shareholders, Hon. F. L. Beique, the president, says:

"We are glad to announce that the Chandler Mill, which heretofore has been a source of loss to the company, has been much improved and will show a substantial profit during the current year. The enlargement of one of the mills at Chicoutimi has also been completed, increasing considerably production of the company. Our pulp, both sulphite and mechanical, is now being sold at prices much higher than in 1919, and firm contracts which have been made for delivery during 1920 and 1921 warrant us in saying that the

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net income for each of these years will exceed three million dollars."

The accounts of the following companies are consolidated in the above statements: Saguenay Pulp & Paper Company; La Cie de Pulpe de Chicoutimi; St. Lawrence Pulp & Lumber Corporation; La Cie Generale due Port de Chicoutimi; La Cie du Chemin de Fer Roberval-Saguenay; The Chicoutimi Freehold Estates Limited; La Societe d'Éclairage et d'Énergie Electrique du Saguenay; La Cie du Telephone Saguenay-Quebec.

**WRITING PAPER EXHIBIT AT ALBANY**

The American Writing Paper Company is to be well represented at the forthcoming convention of the International Typographical Union which is to hold its annual session at Albany, New York, during the week of August 7 to 14.

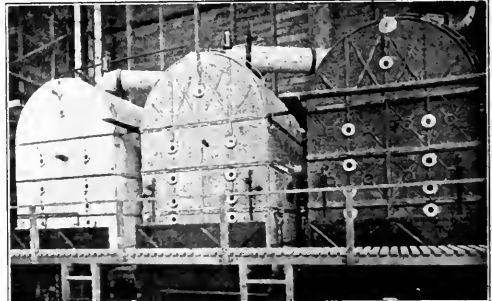
The company has arranged a paper-making exhibit during the last four days of the convention as a special educational feature, which will be in charge of Mr. Fred. C. Clark, director of the company's Department of Technical control.

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# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

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No. 33

## TABLE OF CONTENTS

### *Editorial—*

Soft soap or sacrifice .....	845
Imperialism and paper .....	845
Your future residence .....	846
A point overlooked .....	846
Sulphur, not sulphite .....	846

### *Special Articles—*

The Imperial Press Conference and the Paper Industry .....	847
Prominent British pulp men .....	851
The advertising value of paper packages .....	853
The Imperial Forestry Conference .....	855
The technical man—What is he? .....	857

### *Miscellaneous Information*

Wallpaper taboo in India and Ceylon .....	852
Density table for paper stock .....	854

### *News of the Industry*

State Abitibi logs .....	854
United States notes .....	858
Serious fires in Manitoba .....	858
Pulp and paper news .....	859
Printers' picnic at Ste. Anne .....	860
North-eastern Foresters considered aeroplans and embargoes .....	860
Visited Canadian pulpwood operations .....	861

### *The Markets—*

Canadian trade conditions .....	861
New York markets .....	862



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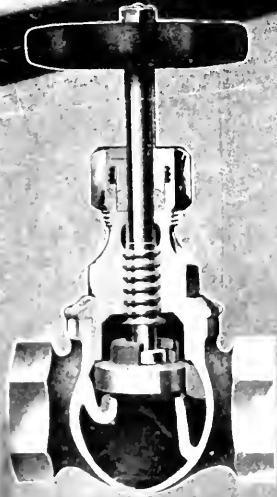
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# EDITORIAL

## SOFT SOAP OR SACRIFICE.

In how many pulp and paper mills is Safety First a form of religion and not simply sop to the workman or a chance to sit on the band wagon? The concern that is backing the Safety First movement just to keep down indemnities for accidents, to cheapen or increase production, or to win the favor of employees, will either lose out or be converted. The energizing principle underlying real safety work must be an affirmative answer to the question of Cain "Am I my brother's keeper?" To realize that each of us is his brother's keeper is the first step toward safety and all the benefits it brings.

The Safety movement is not simply the placing of occasional grease on a machine, or a sign near a danger point—it means also the education and inspiration that will result in taking thought for one another. This taking of thought is the basis of sacrifice—a little time to see that some one is not in the road when turning a corner or dropping a plank, a little care in puling pulp or wood, the trouble to pull or bend down a nail or turn down a board, the effort to remove an obstacle from the path, the time to tighten a nut, to tell a fellow workman, especially a new man, how to avoid an accident, or to be decent in a lavatory.

Can a workman be expected to do all or any of these things if his employer is interested only superficially, if at all, in safety work? Of course not. But when a mill manager is so full of a sense of responsibility for his men that he will order a machine stopped until properly guarded, there is the real spirit of Safety First. Work that is done for the sake of safety and not primarily to swell dividends is what really counts, and these other things shall be added thereto.

Safety work, welfare work, and all the other good works will not succeed as cures for unrest **when undertaken for that purpose.** Their virtue lies in giving an opportunity for some one, every one, to make some sacrifice for the good of others—and incidentally, for himself.

The argument that Canada will profit by the export of raw pulpwood holds equally well in the other direction. Although less has been said of the great advantage that insures to Louisiana, Texas, Pennsylvania, and West Virginia because of the excellent market in Canada for their sulphur and coal, and to other states for rosin, dyestuffs, chemicals, machinery, and mill supplies.

## IMPERIALISM AND PAPER.

Instead of ascribing their newsprint troubles to imaginary discrimination on the part of Canadian paper manufacturers, the newspaper publishers from Australia, New Zealand and other distant parts of the Empire, who are complaining to the Imperial Press Conference of their inability to obtain Canadian paper, as related elsewhere in this issue, should rather, we think, regard themselves as the victims of the fortunes or misfortunes of war.

It is quite true, as was suggested by Mr. P. D. Ross of the Canadian delegation, that the disruption of shipping during the war seriously interfered with and practically put a temporary stop to our overseas exports of paper. The manufacturers had to choose between the alternatives of seeking customers elsewhere or reducing their output. Once having been forced into making other trade connections they, not unnaturally, find it difficult, even if it were in every way desirable, to terminate such connections in order to oblige former friends and customers. Certainly they have no desire and no intention needlessly to discriminate against Australia, New Zealand and other places. They are, however, just as much subject to the exigencies of commerce as are those who make complaint against them. They yield to economic conditions that were originally placed upon them. If in so doing, they are running counter to their obligations to the Empire, what, may be asked, are those British newspaper publishers doing who, says the latest issue of their organ, *The Newspaper World* of London, are deserting the British paper manufacturers in preference for those of Germany?

"The blind, but popular patriotism so prevalent during the war," says this journal in extenuation of their conduct, "which caused business men to say that they would never more do business of any sort with the nations of Central Europe, seems to have quite passed, and many of those who were loudest in their condemnation of any and everything German are now amongst those who are most anxious to open up business negotiations with them if thereby they can get the goods they want and at a cheaper price than they are being quoted in this country." And, again, "Whatever prejudice there was a few years back against trading with them seems to have quite disappeared, and if deliveries are at all up to time and prices lower than home quotations their paper will find a ready sale amongst British buyers and will

be treated solely on its merits as paper, quite irrespective of its place of origin."

If newspaper publishers in Great Britain may buy their paper from Germany on any such basis—and we are not suggesting that they may not—without encountering approbrium, surely the charge of disloyalty to Empire interests cannot successfully be sustained when brought back against Canadian paper manufacturers who did not find it expedient to abandon business obligations which they assumed at a time when it was greatly to their advantage to make them.

However, we are far from suggesting that the troubles of the Australians and others are no concern of those in other part of the Empire. There is much to be said for the policy of Empire solidarity advocated by the Imperial Press Conference. It is true that we should be more convinced as to the sincerity of the Conference's professions, as applied to the paper situation, if they gave us some concrete example of its practice. For instance, we are violating no confidence when we say that one of the Conference's most prominent and most distinguished Canadian members has the good fortune to be able to control the output of a newsprint mill not a great distance from Montreal. Much of this output, we are informed, is now being sold in the American spot market at a handsome profit. The tonnage thus disposed of would, if diverted to Australia and New Zealand, go a long way towards alleviating the inability to get Canadian paper now complained of, and at the same time would entail hardship upon no one, because the overseas publishers say the question of price is not material.

The Pulp and Paper Magazine offers this suggestion in the best of faith, believing it would be a happy solution of the difficulty. If carried out, we think, too, it would go far towards convincing the other manufacturers that they owe a duty to the Empire in this regard, as well as affording strong support to Viscount Burnham's touching appeal to the Canadian Pulp and Paper Association's executive to consider, seriously and sympathetically, the situation with a view to its amelioration and which, in any event, we believe will be met in the spirit in which his lordship offered it.—E.B.

#### YOUR FUTURE RESIDENCE.

A man died owing a certain editor six years unpaid subscription to the paper. The editor did not send any flowers. He attended the funeral and placed a palm-leaf fan and a block of ice on the casket.

None of the subscribers to the Pulp and Paper Magazine are as bad as the man referred to. This is just a warning, though, to the wilfully delinquent, that we shall place on their coffins, in addition to the accessories mentioned, a gas mask loaded for sulphur dioxide.

#### A POINT OVERLOOKED.

The Imperial Press Conference, our report discloses, was given a "publishers' version" of newsprint control as it was carried out in Canada for the period of the war and some months thereafter. We are safe in assuming that the principal and most important effect of the control was not included. That effect was to suspend for a period of practically three years, all expansion of the newsprint-making industry in Canada. Had there been no control, it is safe to say that Canada would have been in a position at the close of the war to have produced at least 50,000 tons more of newsprint paper annually than she was doing. This amount of paper would have gone some appreciable distance in meeting the universal newsprint shortage which now exists. It would seem that the Imperial Press Conference ought to take note of this fact in its investigations into the reasons why some of its members cannot obtain all the Canadian paper they would like to have.

#### SULPHUR, NOT SULPHITE.

A curious mis-statement of one of Mr. Dawe's remarks at the Imperial Forestry Conference appears to be going about. When asked regarding the source of sulphur for the production of sulphite pulp, Mr. Dawe said that most of it comes from Louisiana and Texas and that as far as any one knows, the supply is unlimited. This has been twisted till he is credited with the remark that "there was a sufficient supply of sulphite to last to the end of the world." Perhaps the original was not clearly understood. The press has rather consistently confused sulphite with sulphur, just as it has confused pulp with pulpwood.

The delegates to the Imperial Forestry Conference were quartered in Speech House. How appropriate!

And "the question before the house" is whether we shall have large, excessively large, papers for a few years, or moderate sized newspapers for an unlimited period. There has been an epidemic of **elephantiasis** recently among publishers.

Speaking of freight troubles, one Massachusetts mill is handling paper by truck 32 miles or more to the Hudson River and shipping from New York by boat. Shipments to the Central States and the west are going via steamer to New Orleans and by good luck to destination.

It is reported that Toronto is getting sizable shipments of paper from New England mills. That may be on account of the practical impossibility for them to get freight to United States points and they can probably make use of empty cars that brought Canadian pulp and must go home anyway.

# The Imperial Press Conference and the Paper Industry

By the Special Representation of the Pulp and Paper Magazine.

As was to be expected, the Imperial Press Conference, held in Ottawa last week, developed a lively interest in the Dominion as a possible source of newsprint supply for a large part of the newspapers published within the Empire. In the Conference, which was presided over by Viscount Burnham of England, owner of the London Daily Telegraph and himself interested in paper manufacturing in England, were representative publishers from the United Kingdom, Australia, India, South Africa, the West Indies, New Zealand, Ceylon, Singapore, Malta, Newfoundland, Egypt and, of course, Canada, in addition to the numerous distinguished editors in attendance. That the question of paper supplies was uppermost in many of their minds was apparent from the very first "interview" given to the local newspapers immediately on their arrival. Representatives of the Canadian Export Paper Company, who met them in Quebec, on their arrival in that city, also found them keenly anxious to know all about Canada as a paper-producing country, and on their first contact with a Canadian paper mill at Grand Mere, early in the week, they again evinced the greatest interest in the subject.

At Grand Mere the visitors were the guests of the Laurentide Company, Limited, and were entertained in the hospitable manner common to Mr. George Chahoon, the company's president, and his executive assistants. They were afforded opportunity to inspect the company's mill and took full advantage of the chance to acquaint themselves with a modern paper-making plant in operation. The visitors—even those to whom the experience was no novelty—expressed their admiration and surprise over the general character of the Grand Mere mill and more particularly of the community development built up in connection therewith.

At Ottawa and Hull some of the delegates made personal visits to the Booth and Eddy mills, and other plants will also come in for inspection by the delegates during their tour, which embraces a complete coast to coast journey. Lord Burnham, himself, announced that at the close of the trip he proposes to devote a week to seeing something of the forest resources of Quebec and it is understood that he is going to Chicoutimi to look over the Chicoutimi Pulp Company's property and possibly to inspect other properties.

One of the distinguished members of the conference is Mr. John L. Greaves, who is the editor and one of the owners of the Paper Maker of London. Mr. Greaves was a journalist before being associated with his present publication and is the only representative of a trade journal attending the conference as such. The delegates, naturally, looked to him for much information on the paper situation and not in vain.

In his address upon formally opening the Conference, His Excellency, the Duke of Devonshire, made reference to Canada's pulp and paper industry and spoke of its importance as a contribution to the Empire's welfare. The subject came formally before the Conference in the form of a resolution submitted by

Mr. J. J. Knight of the Brisbane (Australia) Courier, and Dr. T. W. Leys, of the Auckland (New Zealand) Star, worded as follows:—

"The question of paper supplies being of vital importance to members of the Empire Press Union, steps should be taken to ensure adequate supplies throughout the Empire; and that a Standing Committee be appointed to give effect to the above, such Committee to consist of two representatives of the British Isles and one delegate appointed by each delegation and the President who is to be Chairman."

The discussion which followed was opened by Mr. John M. Inrie, general manager of the Canadian Daily Newspapers' Association, in a well conceived and very comprehensive statement of the newsprint situation in Canada and the United States. He gave the publishers' version of newsprint control in Canada during the war and of what had since transpired between the Canadian newsprint mills and their Canadian customers. He stated that a sellers' market exists at present and is likely to continue for some little time, that the market price of paper is not today based upon its cost of production but rather on the abnormal demand. He didn't exactly blame the manufacturers for making the most of their harvest time and said, quite frankly, that the publishers would probably do the same under like circumstances. He said the paper situation from the publishers' point of view might be improved by a general slump in business which might reduce the volume of advertising, but that, of course, was not at all desirable. Greater production of paper was assured some time in the future, his estimate of such increase bringing Canada's total production up to 3,600 tons a day by 1922. The American production would also show an increase, but consumption was likely, in Mr. Inrie's opinion, to keep pace with the output.

As to the diversion of a greater proportion of Canadian-made paper to the United Kingdom and other parts of the Empire, Mr. Inrie was, of course, in sympathy with the suggestion, but thought it had to be considered in connection with the fact that 75 per cent. of the capital employed in the production of newsprint in Canada had been supplied by United States interests. He urged upon the delegates the wisdom of more British capital being brought into the industry, and suggested that with Britain supplying the money and Canada the resources there would be greater reason to expect that British publishers would enjoy a larger proportion of the resultant output. Mr. Inrie also dwelt upon the necessity for conserving and replenishing Canada's pulpwood forests as a means of assuring plentiful and reasonably-priced newsprint in the future.

Mr. A. L. Dawe, who appeared for the Canadian Pulp and Paper Association, traversed pretty much the same grounds as had been covered by Mr. Inrie, to whom he gave credit for an able and accurate presentation of the main facts, while differing slightly with some of the deductions he had drawn from them. He took issue, particularly, with the statement as to

the question of manufacturing costs, which he said were constantly increasing—instancing particularly the enormous rise in the cost of pulpwood—and said they had a very considerable bearing upon the ultimate selling price of paper. He agreed with Mr. Imrie as to the desirability of more British capital being employed in developing Canada's forest resources as a means of giving the Empire newspapers more paper, and said that conditions today do not justify any belief in an early reduction of the market price of newsprint.

**Mr. Dawe's address** was as follows:

Lord Burnham; Ladies and Gentlemen of the Imperial Press Conference.

The Canadian Pulp and Paper Association, on whose behalf I appear before you, regards your invitation to come here and discuss in a brief and informal way the relationship between the newspapers of the Empire and the Canadian Paper Industry, as a very high compliment and as one carrying with it, upon your part, a desire for an interchange of views and of information that may prove to be mutually beneficial.

I am not going to occupy your time with a dissertation upon the origin, growth or present status of the pulp and paper industry of Canada. In anticipation of your meeting here, a careful compilation has been made of all the available information bearing on these several subjects. This has been reduced to printing and given the form of a modest handbook dealing with the industry in its many phases, copies of which will be distributed to you in order that you may peruse them at your leisure.

You will discover from the statistics therein presented that paper has been made in Canada for more than a century, but that the development of paper making into one of the country's greatest industries is of comparatively recent origin. You will learn that there are close to a hundred establishments in Canada now engaged in producing pulp and paper or both, that they represent a capital investment of about \$300,000,000 at the present time, that their annual output is valued at about \$150,000,000 and that they contribute to Canada's external trade well over \$100,000,000 a year.

You will learn, furthermore, that Canada's present annual production of newsprint paper, in which you may be presumed to be specially interested, approximately 870,000 tons, of which not more than 120,000 tons are needed for domestic consumption and that the remainder is exported, in greater part to the United States and in a smaller proportion to the United Kingdom and to other British overseas dominions. You will learn, also, that prospective new establishments and additions to those now in existence, some of which are now well under way, promise a large increase of output in the immediate future. Some of the more optimistically inclined go so far as to predict that within the space of three or four years from now Canada will be producing more than double its present output of newsprint paper. While I am not prepared to endorse, without reserve, this somewhat sanguine forecast, there is no gainsaying the fact that the industry is going ahead very fast and that it would increase still more rapidly were the British paper machine manufacturers able to meet expeditiously all the demands now being made upon them from this side of the water.

Neither is it necessary for me to go into the various details having to do with the production of pulp,

both mechanical and chemical, which at the present time is even of greater importance in maintaining your uninterrupted supply of paper, nor of those relating to book and writing papers, wrappings, boards and all the other commodities which the industry is engaged in producing. The facts and figures in regard to these are also fully set forth in the little volume I have alluded to. Besides, I understand that your itinerary through Canada includes visits to a number of the more important pulp and paper mills and that in this way, at first hand and in a practical and more agreeable form, you will be brought into direct contact with the industry and thus be enabled to form your own conclusions both as to its extent and as to its ability to contribute to the requirements of the press of the Empire. There are, however, one or two questions which, as publishers, you may like to hear discussed.

I have already been asked why, with the demand in the United Kingdom so great as it is today, and with every incentive, from both a business and sentimental point of view favorable towards better trade relationships within the Empire, so large a proportion of our pulp and paper products finds a market in non-British countries and so small a proportion, comparatively speaking within the Empire. A comprehensive and satisfying answer is not easy to formulate.

Before the war, of course, the United Kingdom's reliance for imports of this character was largely centred on Northern Europe. Canada found her distance from the British market an almost insuperable barrier, while at her door there existed an available market made easy of access through the passage of tariff laws especially designed to favor that market. Then, too, there comes in the question of the source of the capital employed in the development of the industry, Canada still having to look beyond her own borders for much of the wherewithal with which to develop her resources.

A financial authority estimates that between three-quarters and four-fifths of the total amount of capital employed in the building of pulp and paper mills in Canada has been derived from the United States. Production naturally, other things being equal, favors the source of the capital required to produce.

Shipping difficulties, for a time, tended to restrict trans-Atlantic exports of pulp and paper, but these have now been swept away. Shipments of Canadian pulp and paper to the United Kingdom are assuming larger proportions, although they are by no means as large as they should be. Exports of paper and paper products from Canada to the United Kingdom increased in value from \$2,675,412 in 1915, to \$4,813,577 in 1920, a gain of \$2,138,165, our fiscal year ending March 31st each year. Exports of pulp increased in value from \$1,198,445 in 1915 to \$5,014,400 in 1920, a gain of \$3,815,955. Included in these exports were 167,372 cwt. (23,368 tons) of newsprint valued at \$1,700,965. Before the war Canada exported somewhere around 100,000 cwt. (5,000 tons) of newsprint to the United Kingdom yearly. The amount varied greatly during the war years, and in 1918-19 reached the low figure of 9,410 cwt., valued at \$3,184. This was due chiefly to shipping conditions. The notable increase in 1919-20 was looked upon by the manufacturers as the beginning of a large and continuous expansion of their United Kingdom trade, but until British capital interests had more extensively in the development of this country, trade between the United



Kingdom and the Dominion will never reach the extent it should nor be of the maximum benefit to those whom it chiefly concerns.

As you journey through our somewhat extensive country you will discover, if you have not already made the discovery, that so far as the pulp and paper industry is concerned, Canada is divided into three separate zones or territories—the east embracing particularly the provinces of Quebec, New Brunswick and Nova Scotia; a central section, taking in the extensive mills in Ontario, and the far west represented by the big mills of British Columbia. Eastern Canada, so far as the United Kingdom is concerned, is the logical field to enlist your special interest. The other districts entail a land haul of from one to two thousand miles in extent before their products can reach the Atlantic seaboard. Freight rates impose a practically insurmountable obstacle to the shipment of paper from these districts to great Britain. British Columbia's production finds its natural market across the Pacific, Central Canada's nearer at home, but there is no good reason why British newspaper publishers, and British paper-makers, too, for that matter, should not draw upon Eastern Canada for a large proportion of their supplies.

The Province of Quebec is generally regarded as being the best off in the extent of its pulpwood resources. It also enjoys the advantage of being the most readily accessible to the British market. This province is estimated to possess 75 million acres of unlicensed Crown lands still available for exploitation, in addition to 15 million acres of licensed Crown lands and six million acres of privately owned lands, all bearing spruce, balsam, poplar and jack pine, suitable for paper-making. These combined lands are estimated to be capable of yielding some 360,000,000 cords of pulpwood. A large part of it, of course, is at present commercially inaccessible. But enough is accessible to supply the pulp and paper requirements of the United Kingdom for generations to come, if, and when, the capital is provided for its development. Quebec also possesses the water-power necessary to the utilization of this vast store of raw material. The province furthermore, is controlled and governed by enlightened laws that operate to the best interests alike of the commonwealth and of those seeking to make use of its natural wealth.

It is, of course, known to you that Quebec, as well as most of the other provinces, requires that pulpwood cut from the Crown lands, under license, shall be manufactured into pulp or paper within Canada. This we regard as a very reasonable and natural requirement, tending to promote the welfare of the province, to provide employment for its people and to give the commonwealth some slight if still inadequate return for the consumption of its resources. This policy, as you may have heard, has led to some controversy of late with certain of our neighbours to the south, the merits of which it is not necessary to discuss here except to say that neither Canada nor Quebec has any reason whatever to shun the fullest investigation into the question by anyone who may be disposed to examine the facts with an open mind.

Quebec offers abundant opportunity to British capital in her vast undeveloped resources. The other Eastern provinces mentioned, while less abundantly provided with raw material than Quebec, are no less ready to welcome the British investor and to help him

in making their natural resources available to the Empire's needs.

Another question I have been asked to touch upon is one relating to the present abnormal prices for Canadian pulp and paper. Are they likely long to continue, or is some measure of relief, if not imminent, probable in the near future?

To this I can only say that most of those who are looked upon as authorities on the subject, fail to see any immediate relief in sight. The price of pulp and paper is governed, as is that of most commodities, by world-wide conditions with which you are all familiar. It is true that the demand, especially for newsprint paper, so far outstrips the supply as to create an abnormal condition, but this, in itself, affects the market price but indirectly. It has, of course, increased prices on what is known as the "spot market," but has had little or no effect upon the bulk of the product.

A recent survey of conditions affecting the paper market in Canada states that the price of wood is the controlling factor and that wood has advanced from a pre-war price of from \$5 to \$6 a cord to as high as \$15 and \$20 and even higher. It is pointed out that the newsprint industry is really the growth of a decade, but that it has made such marvellous strides in this brief period as to necessitate going back to forest areas so remotely distant from the mills, as to require from two to three years for recent cuts of logs to reach the manufacturing plants which, originally, found their raw material at their very doors. Coincident with the growth of the paper-making industry there occurred in Canada a brief period during which the lumber industry stood practically still, so that it became feasible and more profitable to utilize the sawlogs to make pulp instead of lumber. The revival of the demand for building material and the rapidly rising cost of lumber tend to the discouragement of a recurrence of such a condition in spite of the fact that pulp and paper prices are now at levels that were not even dreamed of two or three years ago. All indications—the high price of labor and the enormous increases in the cost of transportation, in addition to the increased cost of wood point, according to this authority, "to a continuation of present high costs of production and high prices for products for some time to come, as it is hardly possible for new capacity to overtake the entire demand for paper products in the next five years, and with normal increase in consumption, even if the present abnormal demand subsides, there must be another period of balance before there is very much actual over-production."

If this prospect is not an alluring one for the paper consumer, it at least has the merit of placing the situation frankly before him for consideration, of putting him upon his guard, and of giving him opportunity for adopting measures to meet it. While it is not for me to suggest what these measures should be, there are two very obvious means of relief—one, that of curtailing the avoidable use of paper and keeping it within the strict confine of the actual necessary; the other, the adjustment of advertising rates and subscription charges to meet the increased costs of production and to act as a deterrent upon unnecessary consumption.

In conclusion, I bespeak better and closer relations between the Canadian paper-makers and the Empire Press. This can be brought about to the advantage of both, by an interchange of information applying to

conditions governing both interests. There should be, in my opinion, a joint committee on standardization, whose business it would be to work for the elimination of all those things which tend to waste and inefficiency, both in the manufacture and in the use of paper, and for the adoption and the encouragement of those things which ensure to greater production and stricter economy in the use of the finished product. There ought to be some sort of co-relation between the building of new printing presses and the building of new paper-machines so that one would serve to meet and offset the requirements of the other, instead of the present haphazard method of building and installing printing machines without adequate assurance as to where the supply of white paper to keep them in operation is to come from.

There are many other ways in which the paper-maker and the publisher can work together and I am here to say, on behalf of the Canadian paper-makers, at any rate, that we welcome such co-operation and are willing to do whatever lies within our power not only to bring it about but to make it effective when once it is inaugurated.

The Canadian Pulp and Paper Association adds its welcome to the great number already extended to this gathering of distinguished journalists from all parts of the Empire. It bespeaks for you a profitable and enjoyable conference and extends to your members, both as a body and individuals, the hospitality of its members whenever in your journeying through the country you may reach a community in which our industry is represented.

Mr. Dawe suggested that something might be done in the way of newsprint conservation by a getting-together between the publishing interests of the Empire press and the paper manufacturers to secure standardization of production and elimination of waste, instancing what had been done along that line by the users of sheet news and the producing mills in Canada. This, however, was not taken kindly by the chairman, Viscount Burnham, who said that efforts along that line had been found impracticable insofar as the British situation was concerned.

Mr. Knight and Dr. Leys both spoke at length to the motion and both gave voice to a serious grievance entertained by the publishers in Australia and New Zealand at being unable to obtain Canadian paper, although willing to pay practically any price therefor. They said that in their extremity some of their publishers had been obliged to buy Scandinavian newsprint at an ultimate price of from \$450 to \$500 a ton computed in Canadian money and taking into account all the factors of freight charges, exchanges, etc. Some of the other delegates appeared to think this statement slightly exaggerated, but the speakers stuck to it.

Mr. Knight said that there was no more important question before the Conference than that of getting paper supplies for Australia. They felt that Canadians should be willing to supply them when they were shipping so large a proportion of their output to countries outside the Empire. He appealed to the Conference for help and said that Empire unity and Empire trade should have a common basis. The Empire needs should come ahead of those of outside nations and that perhaps the dispelling of the war clouds which are again unfortunately manifesting themselves might depend upon a reasonable distribution of the Empire's production of newsprint. The lavish use of paper by the

publishers of the United States and Canada was touched upon and the suggestion made that it could be reduced without disadvantage to the publishers.

Mr. P. D. Ross, of the Ottawa Journal, took up the defense of the Canadian paper manufacturers in a very able brief address. He was sure that there was no desire upon the part of Canadian manufacturers to discriminate against any part of the Empire and while he sympathized with the delegates from New Zealand and Australia in their difficulties, and would do all possible to help them, he thought it unwise to let the sense of grievance prevail over that of fair play. He said that Canadian publishers enjoyed no favors at the hands of the Canadian paper-makers, except that some of them were given the benefit of not having to pay the price that could be exacted if the difference made by exchange rates between the American and Canadian market price were taken into account. He thought, however, that Canadian publishers were entitled to some special consideration because they had contributed to the upbuilding of the industry in this country when, he said, a protective tariff had been imposed on paper for the benefit of the paper manufacturers. He thought, perhaps, the situation complained of now was due to exigencies imposed upon the manufacturers by the war. For a time they were cut off from their overseas markets and had to seek markets elsewhere, since it was not desirable that the mills should be closed. The commitments made as a result of this condition no doubt made it difficult, even if it were desirable, for them to divert paper from the new market back to the old without doing injustice somewhere. Then the fact had to be taken into account that American capital as had been disclosed, was heavily interested in the industry and the American trade was undoubtedly entitled to consideration on that account. There also came in the situation created by the high premium on American exchange which the manufacturers were certainly entitled to consider. The question, in Mr. Ross' mind, appeared to resolve itself into one of trade expediency, although he did not lose sight of the sentimental interest involved and, at any rate, hoped a way would be found to assist the Australasian and other Empire newspapers out of their dilemma.

Mr. J. L. Greaves, of the Paper-Maker and British Paper Trade Journal, contributed a helpful talk to the discussion, by pointing out that the paper shortage was a world-wide affair and by going into some of the economies of the business. He gave some illuminative facts about possible substitutes for pulpwood in the manufacture of paper and the comforting assurance, so far as it applies to Canada, that pulpwood is not likely to be supplanted by any other material so long as it is available. As an illustration of British faith in the permanency of Quebec's forest resources he instanced the recent purchase by the Harnsworth interests of the Gulf Pulp and Paper Company's Mills at Clarke City and spoke of other British investments of a similar nature mooted or in actual negotiation.

The outcome of the discussion was a request made by Viscount Burnham upon Mr. Dawe to bring the Australian and New Zealand newsprint situation to the attention of the Executive of the Canadian Pulp and Paper Association in such a way as to enlist sympathetic consideration. This Mr. Dawe very willingly agreed to.

The newsprint question was further alluded to in the final session of the conference, when the subject

of the Imperial Press Union came up for discussion. Mr. P. D. Ross of the Ottawa Journal instanced the success of the Canadian Press Association in fighting the newsprint manufacturers as an argument in favor of newspaper organization and solidarity. He said that the Canadian newspapers had been "saved" between two and three million dollars within a period of two and three years as a result of their organized appeal to the Canadian government. It might interest Mr. Ross' fellow delegates to know that any such "saving" was secured, it at all, at the expense, in part, of

newspaper publishers outside of Canada, including some of those in the Imperial Press Conference, who, naturally, had to make good the loss sustained by the manufacturers in being compelled to sell paper below cost in Canada as a result of the Canadian publishers' political pressure upon their government.

#### Mr. Imrie's Address.

The manuscript of Mr. Imrie's excellent address was received unfortunately too late to be included in this number. It will appear in the next issue.

## Prominent British Pulp Men

L. P. ANDREWS and ERIC NORDBERG

(By J. R. B.)

Times change and we with them! Nearly a quarter of a century ago I asked a paper man, who hailed from a little Welsh town, what were the objects of a new body I had just heard of going under the name of the Wood Pulp Association and now known as the British Wood Pulp Association. He admitted he did not know; he looked scared in replying, because Trade Unionism about that period was on a crucial pivot—it was growing and falling-back. My paper friend evidently jumped to the quick conclusion, thoughtlessly, that the Pulp Association was another "big gun" introduced a hurl shrapnel into the mills and disturb labor elements, and if there is one thing a British paper mill owner abhors and detests it is anything that tends to cause unrest among his workers. And so we all went on our ways wondering with our eyes focussed on the new Association; until suddenly some one dropped the news in Manchester that one of the promoters of the Association was L. P. Andrews. Among paper makers there were sighs of relief. Why? Well, the paper manufacturer knew that instead of having to cope with a labor leader he was out to deal with a body intended to help him, and, above all, he knew that L. P. Andrews would not associate himself with the Wood Pulp Association, if

there was anything un-English in it. And neither he would.

#### A Brilliant Career.

Having helped to promote the British Wood Pulp Association—some 23 years ago, I believe—Mr. L. P. Andrews (who is of the firm of Andrews & Co. Ltd, New Bridge St., London, E.C.) has now been elected to the position of President and a higher honor could not be conferred on any Englishman. To occupy the presidency a live man is required—one who will take upon himself the trouble to understand, investigate, and deal out mercy with justice in the many ramifications and vicissitudes which come within the scope of his office. At times the office is no sinecure, particularly if a gentleman of the law should imagine that he had discovered a plan in the Force Majeure Clause, but in Mr. Andrews there is great confidence and his name is highly respected in pulp and paper circles.

But one does not eulogise Mr. Andrews, because he is President of the British pulpmen. We recognise in him a true spirit of sincerity; he is perfection of exactness; a fluent speaker with delightful elocution and a methodical business man today at the age of 62 years. All these brilliant qualities have been utilised



MR. L. P. ANDREWS.



MR. ERIC NORDBERG

in the promotion of the great wood pulp industry and the name of L. P. Andrews will go down to posterity as one of its singular pioneers. He has done what MacIntyre, H. T. Meldrum, and a few others have done for the Canadian Pulp Association on its initiation, the only difference being that the work was accomplished nearly 25 years ago after considerable spade work and today Mr. Andrews can sit back in his presidential chair and say: "Let the young ones now carry on!" Not that his work is done—far from it. He is, I am told, attacking one of the greatest bug-bears that could be thrown in the face of a pulp agent and that is the taxation of foreign manufacturers question, which will take the head of a Borden or a Lloyd George, to force what damage it will do financially and otherwise to an industry that is trying to keep the country on its straight legs.

#### As A Pulp Man.

Mr. L. P. Andrews is an ideal pulp man. He has studied the manufacture of pulps in more places than most men and being an old pioneer, he has watched the growth of the industry with interest and delight. He has a very keen eye on Canada just now and I know he, and his firm enjoy very friendly relations with some of the big Dominion concerns. They will always find Mr. Andrews a thorough Englishman and a thorough business man from whom much can be learned particularly at an after-dinner talk. I recollect a story he told some years ago at the expense of a papermaker.

"I was making a round of visits to paper mills," said Mr. Andrews, "and when walking down a mill yard, as I often had done on many occasions before, I was held up by a voice which ordered me abruptly to come back. I went back and when I got to the gate again there stood a very stolid individual who looked at me up and down, and said: 'Give me your name and address and I will telephone it down to the mill.' That did it. I asked what was the meaning of all this as they knew me so well at the mill."

"There was a man came in tuther day and stole a bag of rags."

"Do I look like a man who would steal a bag of rags?"

"I no say that, sir but we are not taking any risks."

Mr. Andrews says he felt crushed. This story has a moral, like all others. It gives a slight indication of a time when the papermaker could not afford time to see the pulp man in an interview. In these post-war days the pulpman now sits in his office and the papermen are being intercepted "down the yard". Times change and we with them. The paperman would do anything to see the little note book of the pulpman today. In the past, it was rags, a missing bale, woe betide the man who took a bale of pulp nowadays.

As President, Mr. Andrews follows such fine British leaders of industry as Mr. Frank Lloyd, Albert E. Reed, and Capt. Partington, who was raised to the Peerage. Behind Mr. Andrews we feel secure and resolute.

#### A Coming Pulp Man.

In these days of uncertainty we are apt to overlook the young ideas. Mr. Andrews does not. He has as a right hand man, Eric Nordberg, who is a partner with his able and respected father, Mr. J. A. Nord-

berg of Messrs. J. A. Nordberg, Ltd., 30-31 Queen St., London. Mr. Eric Nordberg is Hon. Secretary of the British Wood Pulp Association and as a young man he has won the eulogiums of all pulp men. He studied in his boyhood days in Scandinavian mills. The idea was to give him a thorough knowledge of the pulp and paper manufacture. Then he was with the late Alsing & Co. Ltd. of London, and he finished up with Messrs. Becker & Co. Ltd., the large wood pulp importers of the United Kingdom, where he got a great knowledge and insight into pulps, shipping, and minor detail work so often to be encountered in a large place of business. Then war broke out and Mr. Eric Nordberg "joined-up" like many more British Pulp and Papermen. He is now steering the wheel of the British Wood Pulp Association under the guidance of Mr. Andrews and his knowledge besides experience obtained in the United States and Canada enables him to look on things broad-mindedly, besides being a gentleman in his business transactions.

In Mr. Andrews we have a generation of which all pulp and paper men are justly proud: in Mr. Eric Nordberg we have a gentleman jumping into the lime-light to reap the benefits of what men like his President, Mr. Becker, Lloyd, and others have fought for. An organization, like the British Wood Pulp Association must thrive when in the hands of such capable men. It is thriving and carrying on a good work in its own way.

What we want now, say Mr. Andrews and Mr. Nordberg is plenty of pulp. We have markets and the consumers and the Association to study the interests of the pulp men.

#### WALLPAPER TABOO IN INDIA AND CEYLON.

Mr. J. L. Wilson-Goode, I.L.M., Trade Commissioner at Bombay, in response to inquiries writes as follows regarding the sale of wallpaper in India and Ceylon:

As the result of careful inquiry, I have come to the conclusions that the opportunities of selling wallpaper in this country are by no means favorable for the following reasons:

Wallpaper has been used to a limited extent on all types of residential buildings, but the results have not been altogether satisfactory. The principal objects to the use of wallpaper are as follows:—

(a) The dampness of the atmosphere in Bengal affects the brick walls and the bricks contain a certain quantity of saltpetre which attracts the dampness. A very large percentage of the houses have defective damp-proof courses, with the result that the damp rises up the walls to a height of approximately 9 feet above the floor level. Wallpaper placed under these circumstances becomes discolored and peels off.

(b) White ants are very commonly met with and these insects destroy the paper. Attempts have been made to mix paste with blue stone and as a result the paste does not attract the ants, nevertheless the paper is still being destroyed.

(c) The wallpaper provides homes for objectionable insects which thrive in the district.

2. It has been found that ordinary color wash treatment of the walls is the most satisfactory, it meets local conditions, is inexpensive, clean and can be done at short intervals. Distemper has the objection of being too difficult to remove when it becomes discolored through the action of dampness and strong sunlight.

# The Advertising Value of Paper Packages

To give full justice to a subject such as has been handed to me, will take more time than we have at our disposal this afternoon. For that reason, I will try to boil down as much as possible the few remarks that I have to make. In using the word "Paper Package", I mean all the receptacles that are made from paper for the purpose of packing goods. To deal with paper packages as an advertising medium, one will need to make a short historical review of advertising as a whole, for the two are so linked together, it is hard to deal with one without at least touching the other.

Back in early days when trade was in its primitive stages, and there were few articles to be sold, men lived in caves, their wants and needs were few, and were generally got by hunting, but as tribe intermingled with tribe, and trade grew, then there started a crude system of exchange, gradually this expanded, as certain tribes would have articles to barter, and there the first system of advertising must have started. One tribe would tell the other of the goods they had to exchange, and through this beginning, we have from the very earliest of civilization the beginning and growth of advertising, and may trace it down to those two outstanding Nations who advertised, and did it well, Greece and Rome. Their laws, their customs, and their national doings, have been impressed upon minds through the written word and picture. Has there been anything more widely known or more lasting even in more modern times? The municipal Crier, a very important person, was used in the early days, to let people know what was going on, the old time market had its place, which links the past up with the advertising of to-day.

Another outstanding fact in the world, was the discovery and application of steam, before this, were days of small tradesmen—cobblers, blacksmiths, the spinning wheel, etc., whose wares were generally sold by the quality of the goods, and the good word of their friends being passed from neighbor to neighbor, but this all changed with the introduction of steam. Steam power instead of man power introduced the making of many articles and bringing together of many workmen under one roof, and from this has gradually grown the great system of modern commerce. With this factory growth, new systems of distribution were needed, first, travellers were sent out with a certain amount of limited advertising, largely local, and then we find advertising campaigns undertaken until today, we have the growth of business with its combinations, and find side by side with this tremendous growth, plans and schemes of national and international propaganda are being used. The package has had its place from the very beginning wherever there were goods to be packed and shipped, it had its use, whether made from wood, grass, paper or iron, these were the forerunners of the great number of packages that are used to-day. With all this growth, there has been certain fundamental principles

at work, that has within the last few years brought a new industry into being; first the desire to improve the manufactured product, second the improvement of its appearance, or might I put it another way, the desire to dress a large part of the goods of the world in an attractive manner. With this as a back ground, we can appreciate all the more the value of the package, not only as a piece of commerce, but as part of the great system of advertising, along with its selling power.

It is a very practical proposition, and you and I as manufacturers, are keenly interested in its possibilities.

## Its Scope.

In nearly every line of business, new sources of application of the package, are being opened up; one needs to but look around and see the many ways in which packages are being used, and to my mind, it is just at the beginning of the development. It has grown and expanded during the last ten or fifteen years, when only a few articles were put up this way, till we find now, that almost every kind of marketable goods are being put up in packages. We find that in this country, there has grown an industry which has become very important to the manufacturer and his product.

## Its Advantages.

Need I draw your attention to the advantages of paper boxes, their sanitary qualities, their convenience, their individuality, eliminating chance of substitute, guaranteeing the makers goods increasing its selling power easy of handling. In fact, they put well dressed goods as well as well-dressed salesmen on the selling end of the manufactured product and, skillfully handled, mean increased sales and larger turnover for the buyer.

## Its Selling Power.

The distinctive paper box will give life and expression to what might be otherwise one of many articles of the same kind, which have the disadvantage of being bulk goods. To make myself clear, let me tell the experience of one of our customers who told me he had been selling his goods in packages for a long time, and through the increased cost of cartons, thought he would try and sell them again in bulk, which he did, but his experience was, that his sales fell off nearly 50 per cent. in six months. He is now convinced more than ever that packages pay.

When placing on the market a package, many details must be taken into consideration, art, design, size, shape, strength, color, simplicity, and to whom it is going to appeal—men or women. To look at packages from their wide application, makes them something more than so much cardboard, to try and incorporate into them the possibilities of design, advertising and selling powers, makes an unlimited field for development.

## Its Educational Value.

Probably this is one side to which we have given very little thought, but if we stop to think for a moment, we see here a splendid opportunity of telling the public the merits of the goods that are enclosed, in a few sentences to tell the prospective buyer the story of the enclosed product, and as a

\*Paper read by Mr. J. B. Lawrason of Messrs. Lawrason-Doughy Company, Toronto, at luncheon of Toronto Carton Club held in Toronto, Tuesday, July 6th, 1920

rule, it can be done in a short concise way that the buyer can read at a glance, and will leave a lasting impression.

**Its Standardization.**

This is one point that has been given a good deal of consideration, during the recent past. I think it is one of the most important subjects that has to be considered, and the very best thought of this organization should be given to its working out. We will find that the paper box will become more useful, and will become a better paying proposition than it has been in the past, through eliminating what may be a good deal of duplication and waste. Another thought comes to my mind, if ever the time comes when the present rush of business eases off, we should keep in mind the all around advantages of the package to the prospective customer to create new business, and in this way we will get business which will keep our factories busy, instead of going out and cutting prices to get work.

I believe it would be well for the Toronto Carton Club to keep in mind some way of keeping the industry before the public, in an effective, and practical way, by exhibits of finished products actual operations of the goods being manufactured, which would have a fascinating and educative value for the public.

Allow me to repeat, is there any industry that has greater possibilities of future expansion and by its application to draw upon the very best there is in us, and by its continued development and expansion

to be of real service to the world of business, and by keeping the higher ideals ever before our minds, to contribute to the convenience and betterment of the human race?

**STOLE ABITIBI LOGS.**

The Abitibi Power & Paper Co. has brought action in the Police Court at Quebec against five lumbermen of Lasarre, named G. E. Lambert, H. Bergeron, C. Doheney, J. N. Bouchier and G. C. Chevalier, who are charged with having taken lost logs to the amount of \$10,000. Messrs. J. N. K. Laflamme, K.C., of Montreal, and Mr. Hector Laferte, K.C., M.P., who appear for respondents, admit that their clients had been found with the wood in their possession, which is alleged to belong to plaintiff, but claim that even if it had been the property of the Abitibi Power & Paper Company, Ltd., this action has been entered in a court which has no authority, as it is purely a question to be decided by the civil courts. In answer to this, plaintiff, represented by Mr. Robert Taschereau, K.C., Montreal, contends that the wood found in possession of accused was stamped with a registered mark, and under no pretext could the respondents have kept it, which was a violation of the law. Due to the importance of the amount and the fact that the five persons involved are well known in Lasarre, great interest is manifested in the case.

A similar difficulty is being faced in Ontario.

# Density Table for Paper Stock

This table has been prepared for the rapid determination of quantities of bone dry fibre in stock of known percentage density, or for converting inventory of wet stock into equivalents in other units, and also for the assistance of the engineer who will find it useful in calculating the wet stock capacity required in producing a specified tonnage of paper

Percent of Lbs. Dry Fiber per 100 Cu Ft. Liquid	Pounds Dry Stock in 1 Cu. Ft. Liquid	No. Cu. Ft. Containing 1 Lb. Stock	Lbs. Dry Stock in 1 Gal. Liquid	No. of Gals. Containing 1 Lb. Stock	Cu. Ft. Liquid per Min. per Ton Dry Stock per 24 Hrs.	Gals. Liquid per Min. per Ton Dry Stock per 24 Hrs.	Lbs. Liquid per Min. per Ton Dry Stock per 24 Hrs.	Lbs. Water per Lb. Stock	Gals. Water per Ton Stock	
.10	.0625	16.00	.0083	119.76	22.20	66.24	1,388.88	290.00	119.64	2,302.80
.1250	.8000	.0167	.0167	59.88	11.10	81.12	400.00	50.76	1,195.20	
.1500	6.40	.021	.021	47.87	8.88	66.49	555.55	39.00	47.75	955.11
.1750	5.11	.025	.025	39.00	7.41	55.41	562.09	32.51	39.28	795.53
.2000	4.57	.029	.029	34.29	6.35	47.50	396.81	28.71	34.08	681.54
.2250	4.00	.038	.038	29.02	6.55	41.56	347.22	24.00	28.80	606.05
.2500	3.66	.045	.045	27.43	4.94	36.94	308.64	21.77	26.48	529.55
.2750	3.15	.042	.042	23.04	4.44	33.25	277.77	19.00	23.52	476.80
.3000	3.47	.046	.046	21.76	4.04	30.22	252.52	18.82	21.61	432.84
.3250	3.26	.050	.050	19.84	3.70	27.71	231.48	16.66	19.83	396.56
.3500	4.175	2.46	.058	17.10	3.17	23.75	188.42	13.86	16.08	330.57
.3750	4.667	2.13	.068	15.06	2.96	22.16	185.18	12.31	15.84	316.24
.4000	5.00	2.00	.067	14.06	2.78	20.78	173.61	12.00	14.84	296.83
.4250	5.312	1.86	.071	14.06	2.61	19.56	163.40	11.66	13.06	270.22
.4500	5.624	1.81	.075	13.71	2.47	18.47	154.32	11.11	11.18	263.58
.4750	5.937	1.68	.079	12.61	2.34	17.50	146.19	10.26	12.48	246.58
.5000	6.25	1.60	.084	11.97	2.22	16.62	138.88	9.90	11.85	230.68
.5250	7.812	1.08	.104	10.57	1.78	13.80	113.11	7.90	9.45	189.11
.5500	9.125	1.07	.125	7.98	1.48	11.08	92.50	6.66	7.86	157.10
.5750	11.037	.91	.146	6.84	1.27	9.50	79.37	5.74	6.72	134.30
.6000	12.50	.80	.167	5.97	1.11	8.31	69.11	4.90	5.86	117.20
.6250	14.062	.73	.188	5.40	.99	7.30	61.71	4.14	5.20	103.00
.6500	15.625	.64	.200	4.70	.80	6.65	55.55	3.60	4.67	93.35
.6750	17.187	.58	.210	4.31	.81	6.04	50.50	3.16	4.23	84.65
.7000	18.750	.53	.251	3.99	.74	5.54	46.29	2.81	3.87	77.40
.7250	20.312	.45	.292	3.61	.63	4.75	40.68	2.52	3.10	66.00
.7500	21.875	.46	.325	2.99	.55	4.15	34.72	2.10	2.87	57.45
.7750	23.437	.36	.375	2.74	.49	3.60	30.85	1.72	2.54	50.80
.8000	25.000	.32	.418	2.40	.44	3.32	27.77	1.60	2.27	45.36
.8250	26.562	.29	.450	2.18	.40	3.02	25.26	1.48	2.06	41.11
.8500	28.125	.27	.501	1.99	.37	2.77	23.15	1.37	1.87	37.50

# The Imperial Forestry Conference

Written for the Pulp and Paper Magazine by Ellwood Wilson.

Late in 1919, Mr. Robson Black of the Canadian Forestry Association, wrote Sir John Stirling Maxwell, suggesting an Imperial Forestry Conference. The British Forestry Authority took up the matter and invited the British Dominions and Colonies to send delegates, and 35, from all parts of the world, met in London on the fifth of July. There were present also 54 Associate Delegates. Canada was represented by Messrs. E. H. Finlayson, Forestry Branch, Ottawa, Clyde Leavitt, Commission of Conservation, Robson Black, Canadian Forestry Association, M. Kilbey, Canadian Government Railways, M. A. Grainger, Chief Forester British Columbia, Avila Bedard, Assistant Chief Forester, Quebec, and Ellwood Wilson, Canadian Society of Forest Engineers. The meetings were held under the Chairmanship of Lord Lovat, K.T., K.G.M.C., D.S.O., Chairman of the British Forestry Commission. The first day was spent in visiting the British Empire Timber Exhibition and the second in a visit to Kew Gardens, the celebrated Royal Botanic Gardens and Arboretum in London.

The opening session of the actual work of the conference was held in the morning of the 7th July in the historic Guildhall, and addresses were made by the Lord Mayor of London, Lord Milner, Lord Lovat and several of the delegates. The Forestry Commissioners entertained the delegates at lunch and in the afternoon in the Council Chamber of the Guild Hall, the delegates presented their reports on the forest resources of the various Dominions and Colonies. These meetings were very impressive and especially the afternoon session when a mass of information on the forest conditions and resources of so large a part of the world was brought together. No such authoritative statements had ever been prepared and the conference had before it up-to-the-minute data for the study of forestry and timber supplies the world over. In the evening the delegates were entertained by the Forestry Students Society of Oxford, Cambridge and Edinburgh Universities. At this banquet Sir William Schlich spoke most interestingly. The next day the delegates left for a trip through the Crown Forests of Dean, Highmeadow and Tintern, as the guests of the Forestry Commission and spent three delightful days in tramping through Dean Forest situated in the West of England and in getting acquainted with one another.

The Forest of Dean lies between the Rivers Severn and Wye in the West part of the County of Gloucester. This forest contains 18,700 acres under management and also a freehold of 15,594 acres, but, owing to the legal position, only eleven thousand acres of the forest can be enclosed at any one time, so that the whole area cannot be placed under management. This area has been reserved as a forest since the earliest time. The term "Forest" originally meaning an area set apart for hunting and having little of its present meaning. This forest was originally oak and was used for supplying timber for wooden ships.

The greater part of the actual Forestry work was first undertaken in 1808 and by about 1832, eleven thousand acres had been planted up. In the early days

the trees, on account of Naval requirements, were grown with large spreading crowns in order to obtain knees for ships. After wooden ships were discontinued an effort was made to grow the trees taller and straighter. A great many plantations of exotic species have been made including Douglas Fir and Sitka Spruce. These two species make remarkable growth and those of the delegates who were familiar with British Columbia said that the growth was certainly equal if not greater than that in their native habitat.

Oak is perhaps from one to two hundred years old and Coniferous species from one to eighty years old.

The delegates were quartered in Speechie House, still belonging to the Crown, and in which in early time the old Verderer's court was held for trying cases of crimes against the Forest Law. These were very severe in the early days and a man would lose his life or be mutilated for killing a deer and often a hand was cut off for killing rabbits or smaller animals.

The prices received for wood cut in these forests are rather interesting: Oak over ten inches forty cents per cubic foot, felled lying in the wood. Oak under six inches to ten inches about twenty-four cents per cubic foot felled. Beech, seventeen cents per cubic foot felled; Larch, thirty cents per cubic foot felled; Spruce, twenty-two cents per cubic foot felled; Pit-wood, for use in the mines; hardwood, \$10.00 per ton, free on rail and coniferous species, \$12,000 per ton free on rail; hardwood, cut into cord wood, \$5.00 per ton, free on rail.

The forest is in charge of a deputy Surveyor, with a head Forester and thirteen Foresters with definite beats and having charge of gangs working in these beats. The average number of workmen employed is one hundred and forty to one hundred and sixty.

The receipts from the forests of Dean, for the period 1908 to 1918, amounted to \$389,000 and the expenditure \$440,000 making a deficit for ten years of about \$50,000.

The Forest of High Meadow comprises about three thousand, five hundred and eighty acres, of which three thousand, three hundred and forty-nine are under timber. This was purchased by the Crown in 1817 and further purchases were made in 1821 and 1828. At the time of purchase, the timber was between fifty and sixty years old and about a thousand acres were planted with oak between 1825 and 1850.

Larch has been freely introduced in groups among the oaks to replace the matured standards cut out, but in most cases the groups were too small and the surrounding oaks were tending to close in over the Larch. In 1911, a system of clear cutting and replanting at the rate of approximately a hundred acres per year was begun. A new working plan is now in course of preparation for these woods. The best of the soil will be given over to oak and the remainder will be planted with conifers and ash.

The prices ruling in the woods are practically the same as those in the Forest of Dean, but there is a larger quantity of good oak timber which sells up to fifty-two cents per cubic foot in the woods.

The excess of receipts over expenditures for the

period 1908-1918 amounts to about one thousand dollars.

The Forest of Tintern, situated on the left bank of the River Wye, between the towns of Monmouth and Chepstow were purchased from the Duke of Beaufort in 1901 and contain three thousand, two hundred acres. The object of management since 1914 has been the production of coniferous and hardwood timber of good quality and also a supply of small wood for the local turnery industry. A great bulk of the material which is cut in the wood is used for mining purposes. This applies to both hardwood and smaller coniferous poles. The better class larch poles are sold for telegraph purposes. The smaller hardwood material is utilized in the manufacture of chair legs, et cetera. Practically all the material is felled by the Crown and is disposed of to timber merchants. The prices run somewhat higher than in the other two woods.

The balance of receipts over expenditure for the ten year period has been thirty-six thousand dollars.

On July 10th the main body of the delegates returned to London while a special committee of thirteen remained at Tintern Abbey to discuss the policy and general conduct of the Conference just in session. This meeting was held in the Beaufort Arms Hotel at Tintern, overlooking the ruins of the famous Abbey of that name and the beautiful valley of the Wye River.

On Monday, July 12th, the delegates met in the morning to elect a president and to decide on the procedure and form an address to the King. After that there was a general discussion of the responsibility of the State of Forest Policy and it seemed to be the general opinion that as Forestry was a long time business, that the State was certainly responsible for the management of forest lands owned by it and there was also the opinion that a certain amount of supervision over private forest holdings was the duty of the State.

In the afternoon a description and discussion of the Forestry Department of all the various countries represented was held and much interesting information on these points was secured.

On the 13th, methods and problems of technical forestry were discussed, including fire protection, reforestation, utilization and so forth.

In the afternoon the subjects of education and research were talked over and it was the consensus of opinion that for England, at least, it would be better to have only one forest school, rather than the three which exist at present. It was also decided that a central Forestry Bureau for the exchange of information to be a sort of clearing-house for all sorts of Forestry matters should be set up in London and also that some Central Bureau of Research which did not trench on any of the work being done by similar organizations should also be established.

On the 14th of July, the resources of the British Empire and the consumption of forest products were also discussed together with the scope for Imperial development. As different parts of the Empire have different kinds of timber and different needs, it was hoped that there could be an interchange of products between them so that to make the Empire self supporting in its forestry needs.

From the 14th to the 20th of July a tour of Scottish forests was made and on returning, the Committee which had been appointed at the previous meeting

presented their report, resolutions were discussed and adopted and on the 21st an address was presented to the King at Buckingham palace from the Conference.

In the afternoon there was a discussion of the foundation of an Imperial Forestry Bureau and the session concluded by a banquet to the delegates given by His Majesty's Government.

On the 23rd a visit was made to Windsor Forest with a luncheon at the Royal Hotel Ascott.

In every way the Conference was a great success and should be one of the brightest mile-stones in the history of Forestry. The fact that the British Empire sees the need for proper forestry management of its timber resources and that men were gathered together from all parts of the world to discuss these questions in common is of the very greatest importance.

To sum up generally, one's impression of this Conference was the splendid hospitality of the Forest Authority's members to the delegates. The meetings were conducted in the most business like way that the writer has ever seen and moved more smoothly and a greater amount of work done per unit of time than it has ever been his experience to witness.

The delegates were promptly in their places at the opening of the sessions; speeches were short, business like and without oratorical efforts and when anyone commenced to get off the subject which was being discussed by the Conference he was promptly brought back to the matter in hand.

Lord Lovat, as Chairman, handled these sessions in a most masterly manner and to him is due a great part of the success of the Conference.

The English Authorities did all in their power to encourage the delegates from overseas to express their opinion and to take the major part in the debate and in all the proceedings and their splendid hospitality will never be forgotten by any of those present.

The problems confronting Foresters in all parts of the world were found to be practically the same; lack of money, lack of continuity of policy, lack of trained personnel, lack of definite information in regard to forest resources, interference by political authorities, lack of definite forest policy and an insufficiently formed public opinion were found to be common to all the countries represented.

The setting up of a Forestry Commission in Great Britain had been a wonderful step in advance and this Commission has been given a free hand and an appropriation of fifteen million pounds to be spent in reforestation of waste land and to encourage private planting for the next ten years. Great Britain learned a lesson during the war in its lack of timber supplies and the necessity of importing everything from overseas. The present policy will be to establish sufficient forests to fill the needs of Great Britain for three years should any future war occur.

The situation in India was perhaps the best of any country because there, Forest Authority has the full backing of the Indian Government and as this great dominion is not a democracy, the necessary power to establish a definite policy and to insure its continuity is present.

With only one exception, all the foresters present, except those from Canada, were in favor of establishing and maintaining forests by plantation rather than by natural reproduction. The general reason for this was that under natural reproduction many undesirable



and weed species take the place of valuable species or seed in along with them, making their management difficult and it was felt that planting was cheaper and a better means towards establishing forests.

This Conference was so successful that it has been decided to hold one every three years and the next

one will be held in Canada in 1923.

Messrs. Clyde Leavitt, Avila Bedard and Robson Black made a trip through Holland and Belgium to the battle fields of France and some of the French forests after leaving the Forestry Conference in London.

## The Technical Man.—What is He?

By A. G. DURGIN, in Spanish River News.

Every practical operator is in essence a technologist, having acquired through years of training and thorough experience a vast fund of practical information, and a detailed knowledge of operative short cuts, and of machine, and process control, which makes him a master artisan.

This special training, often started in early youth, has made the practical man alert to all the possibilities of his craft, so that he is both willing and eager to attempt new developments, which will increase the efficiency of process or machine and tend to produce larger output and increased quality.

The technically trained man possesses as his "stock in trade," a knowledge of the fundamental laws of nature, physics, chemistry and mechanics, which underlie all manufacturing processes. His equipment makes it possible for him to enlarge on operative ideas, and to design machinery or process to render the idea operative.

The relationship between the operating and technical man must, therefore, be a partnership to which each brings his own special training or equipment. The operator suggests possible alterations in design of equipment or criticizes constructively the design offered by the technologist. Both are vitally interested in the betterment of machinery and process and in the elimination of waste.

The present destruction of the spruce forests, to supply the ever increasing demands for paper, indicates that before many years the industry will again be confronted with the necessity of developing new raw materials just as in 1855 the acute shortage of rags made necessary the development of the great wood-pulp industry. This is a vital problem which demands attention alike from the operator and technologist, that the present supply may be protected and used to the utmost advantage and when this supply can no longer meet the demand, new sources of material shall be available, new processes perfected, that operation will not cease, and healthy growth of the industry will continue.

The salvage of waste both in the paper industry and in the by-product of other industries is of paramount importance in the struggle to reach ideal operating conditions. A typical case is the commercial utilization of liquid sulphur dioxide, obtained from smelter waste, in the Crown Williamette Mills.

For over 50 years tons of sulphur dioxide have daily been discharged from smelter stacks, representing not only a loss of sulphur, but also constituting a menace to agricultural pursuits in the area surrounding the smelter, since no vegetation can withstand the destructive action of these fumes.

During practically the entire period the basic method for collection and liquefaction of the gas has been known and cars suitable for transportation with ab-

solute safety have been procurable.

Despite all this, the actual development of this product along practical lines was not affected on this continent until 1919 when the joint effort of operator and technologist both in the smelter and in the mill solved the problem, thus increasing the supply of raw material, and at the same time making better control of acid manufacture possible.

The question of waste sulphite liquor too has been a problem before the industry for many years. Numerous and ingenious methods have been devised to utilize this waste, which represents half the weight of the wood.

Coal briquettes, road binder, alcohol, and scores of other products have been made, but the right solution is not yet discovered and more than 1000 tons of this material are discharged daily into lakes and streams. The solution of this problem is not impossible and the day will come soon, when this material, at present waste, will form the nucleus of a big new industry.

Yet another phase of technical work is standardization and control.

Standardization of machinery and equipment reduces the general storage of repair parts to a minimum and insures more complete stock. But standardization does more, for, acting on the principle of elimination, parts of machines, which have become obsolete or nearly so, as a result of improved method or design, are eliminated, and the most efficient product substituted.

Another phase of standardization is that of standardizing finished product. The grading system of the Quality of Product Department which gives a numerical value to the product of the mill is an example of this type of standardization.

Undoubtedly the most intimate contact between operator and technologist comes from the daily intercourse in control work. The testing and valuing of raw materials and of finished products, the establishing of operating limits, as freedom of groundwood, strength of sulphite, etc., are too well and favorably known to require mention.

In brief, then, the relationship between operating and technical men is a partnership, the object of which is improvement of present method of elimination of wastes as outlined in this article. Anything which is developed either individually or jointly must eventually, when put into practice, come under the control of the practical operator and the acid test to any project or development must be finally measured by the test, "Will it work successfully in practice?"

Although each group may function successfully as an independent unit, and apart from the other, the best results can only be obtained through harmonious co-operation, to which each group contributes its own special assets.

# UNITED STATES NOTES

J. Y. Webb of Dallas, Texas, and G. W. Beeman, Texas, have just effected the organization of the Trinity Paper Mills which, following the erection of its initial plant, will manufacture various grades of book, blotting and writing papers from cotton linters. The company is capitalized at \$1,000,000. Work on the construction of the first mill will be started at once. This plant will have a daily capacity of 20 tons a day. Its cost will be \$800,000. This is the first paper mill to be started in Texas for the express purpose of utilizing linter pulp. It will purchase the raw linters, make its own pulp and produce the finished paper.

The Grays Harbor country of Washington State is to be the site of a new pulp and paper mill projected by a new company whose incorporation is being arranged by R. J. Parks of New York. Mr. Parks who has succeeded in interesting Western capital in the venture, says it is intended to bring the mill to the Northwest in units from the East. Washington has been chosen for the location, says Mr. Park, because the supply of woods suitable for pulp in that State is almost inexhaustible.

The General Paper Goods Manufacturing Company has purchased a block of forty-four lots in Bay Ridge, Brooklyn, as a site for a new re-forested concrete warehouse. The main plant of the company is in the Bush Terminal Buildings.

The American Writing Paper Company announces that Donald P. Weston, formerly with the Canadian Export Paper Company, Ltd., has been appointed manager of its Buffalo office, succeeding John L. Forsythe, who resigned recently. Mr. Weston has had considerable experience as a paper salesman in the territory over which he has been placed in charge.

A new power-house, to cost about \$45,000, is being erected by the Colin-Gardner Paper Company at Middletown, Ohio.

The Royal Card and Paper Company has purchased from the Majestic Paper Mills Company two six-story buildings with stores on Broome and Wooster streets, New York City. Following extensive operations, the new owners who are at present located at 100 Worth street, will occupy the structures. The buildings involved in the deal have been owned by the sellers for several years and were held at \$175,000. They return an annual rental of approximately \$25,300.

Arrangements are being made through the Portland, Ore., office of the United States Forest Service for a tour of investigation in Alaska by Forest Service officials. The trip is to be made some time this month. The party will be headed by Colonel W. B. Greeley, United States forester and will include George Cecil, forester of the Alaska district, Fred Amos, assistant district forester and John D. Guthrie of the public relations department. The main object of the trip will be the inspection of Alaskan timber resources in connection with a possible development there of the pulp and paper industry to meet paper requirements in the United States.

Lives of several workmen were endangered when the plant of the Empire paper mill at Hlaca, N. Y. collapsed last Saturday. An overload of paper stock

on the second floor is thought to have been responsible for the accident. The monetary loss to the company is estimated at \$25,000.

According to the American Forestry Magazine, manufacture of paper pulp from seaweed is proving a profitable undertaking in Japan and the only company making this pulp is building another factory. This concern was organized in December, 1919, and is producing, by a secret process, about fifty tons of pulp daily, which is largely used in the composition of cigarette paper. The new plant, when completed, will have a daily capacity of 150 tons of pulp. The present price is about 5 cents a pound.

Cable orders for samples of paper suits much in vogue in Germany and Austria have been dispatched by the United States Department of Commerce. In a statement explaining this action the department says that it has received numerous inquiries and that wide interest has been created since the publication of a recent despatch from England telling of the display in stores there of large quantities of such suits, which, it was said, retailed at 40 cents each. When the samples arrive they will be displayed not only in Washington, but also in the department's district and co-operative offices located in important cities in the country.

The Eau Claire Paper Manufacturing Company, recently incorporated in Wisconsin with a capital of \$400,000 by W. L. Davis, Jr., Willy Brubacher and Claude Hayden, will build at once in Altoona, Wis., near Eau Claire. Commercial filter paper used by chemists, sugar refineries and manufacturers of fruit syrups will be made by the new company. When the Altoona mill is finished, the plant of the old Eau Claire Manufacturing Co., in Eau Claire will be dismantled. The latter was an unincorporated concern whose plant and business have been taken over by the newly formed company.

A branch office in the Holyoke National Bank Building in charge of Charles R. O'Neil has been opened by the Maurice O'Meara Company of New York. Through this office the company proposes to keep in closer touch with the mills it serves.

An announcement has been sent out by the Northeastern Division of the American Pulp and Paper Mill Superintendents' Association calling for a meeting on September 8 at the plant of the Eastern Manufacturing Company, South Brewer, Maine.

## SERIOUS FIRES IN MANITOBA.

Winnipeg, August 6. Two forest fires raging in northern Manitoba are endangering thousands of dollars' worth of timber, one on the east side of Lake Winnipeg at the head waters of the Manizotogam river, and the other on the east side of Lake Winnipegosis, north of Lake Pickorel, according to word received today by the Winnipeg office of the Dominion Forest Service.

The situation is rendered more acute by the fact that the north country is drier than it has been for twenty years, officials said. There has been no rain for two months.

# PULP AND PAPER NEWS



E. G. R. Clarke, who represents the Canadian Nashua Paper Co., Peterborough, Ont., was in Toronto this week. It is understood that the company will soon open an office in Toronto.

George W. Pauline, sales manager of Ritchie and Ramsay, coated paper manufacturers, Toronto, has returned from spending his holidays at Pointe au Baril on the Georgian Bay where he had good luck fishing.

L. S. Stevenson, President of the Mountain Hill Paper Co., Lee, Mass., manufacturers of greaseproof paper, was in Toronto recently where the company is represented by Paper Sales Limited.

C. Nelson Gain, manager of the Don Valley Paper Co., Toronto, was in Lawrence and Boston recently on a business trip in connection with improvements which are being made to the plant of the company.

The Copeland-Chatterton, Limited, of Brampton and Toronto, who for the past twenty five years have been manufacturing loose-leaf and filing equipment, have just opened a large new factory in Toronto at 1303 Queen St. West.

C. N. Ramsay of Ritchie and Ramsay, Limited, Toronto, is spending the summer months at his cottage at Eastbourne, Ontario.

Joseph Shiach died recently at his home 362 Ossington Avenue, Toronto, in his sixty fifth year from pneumonia. Mr. Shiach, who was a prominent contractor, was the father of Charles Shiach of the Lincoln Paper Mills Ltd., Toronto, and was the chief director of operations in connection with the construction of the big pulp plant of the Spanish River Pulp and Paper Co. at Espanola, Ont.

The Bulletin of Collingwood, Ont., recently celebrated its fiftieth birthday, being established in 1870 and fifteen years later was taken over by William Williams and his son, David Williams, former President of the Canadian Press Association, who are still in possession. The Free Press, of Aetou, Ont., and the Mercury of Renfrew, Ont., are other weekly publications nearing their golden jubilee.

There are now only one hundred and eleven daily newspapers in Canada and owing to the high cost of production and materials, over half of them have already advanced their rates to three cents a copy while in the west the price is five cents per copy.

A. V. Nolan, who has been a partner in the Enterprise of Chesley, Ont., for two years, has sold out his interest to his partner William McDonald, and has bought the Advance of Barris, Ont.

Rev. J. M. G. Mutch, who for the past three years has been associate editor of Presbyterian Publications, Toronto, has received and accepted a call to the First Presbyterian Church, Truro, N. S.

The Provincial Paper Mills Co., Ltd., have acquired for their Port Arthur division the steam tug W. J. Emerson and are using it in conjunction with the tug Maitland for the hauling of pulpwood.

A number of fires are burning in the vicinity of Nelson, B.C. The Salmon Valley and Kootenay Lake seem to be the worst danger spots.

The American Paper and Pulp Association has again registered with the Western Union Telegraph Company the cable word "Ampapulp."

Mr. Guy Tombs, manager of transportation for the Canadian Export Paper Company of Montreal has returned from an extensive western trip in which he covered most of Canada that can be reached by train or steamer.

The News of Chatsworth, Ont., which has been published by T. H. B. McCullough, has been sold to the Fleming Publishing Co., of Owen Sound, publishers of the Sun-Times, who have taken possession.

Important newspaper mergers have taken place in the west owing to the high cost of newsprint and the great expense in production. The Regina Daily Post has been taken over from W. E. Herman by the Leader Publishing Co. of Regina. The Post is an evening newspaper and will be issued from the office of the Regina Morning Leader. The Saskatoon Daily Phoenix has been taken over from the Northern Publishing Co., Limited, and will be issued from the office of the Saskatoon Daily Star. The papers will continue to be published under their present names.

Jenkins Bros., Ltd., have opened a big addition to their Montreal plant. The new machine shop, which covers 16,000 feet of floor space, will be used by the Iron Valve Division. The opening was made the occasion for a regular "blow-out," when the company tendered a reception to their employees. Mr. W. E. Trimble, managing director, outlined the plan for group insurance and also the pension scheme.

A suit has been entered in the Supreme Court of British Columbia by George H. Grauer, formerly of Janesville, Wis., against the Whalen Pulp and Paper Mills Co., for recovery of \$62,000, on an alleged breach of contract. Mr. Grauer, now a broker in Yokohama, Japan, claims that on October 9, 1919, he contracted with the Whalen Company for the delivery of 100 tons of pulp, for which he was to pay \$140 per ton, C.I.F. in Yokohama. The pulp was not delivered, and the plaintiff is seeking to recover his damages on account of non-delivery.

Two cases of unusual interest to the lumberman and public generally are before the police court at Parry Sound, Ont. The lumbermen and pulp wood owners of the Georgian Bay have been greatly troubled, and have suffered heavy losses from the operations of log stealers and the number of small mill owners, who have been willing to act the part of the "fence" and purchase logs bearing the stamp of other lumbermen. To prevent this as far as possible the Timber Marks Act was passed making it a criminal offence to either pick up logs bearing the registered marks of lumbermen or to cut off or deface marks, but in spite of severe penalties the pirates have been doing a thriving business.

New stumpage dues have gone into effect on the Crown lands of New Brunswick. The rate has been increased from \$3.50 to \$5.00 a thousand feet with increases in other minor particulars. The advance mentioned is on spruce, pine and hematac saw logs; fir and poplar logs from \$3.00 to \$4.50 and hardwood logs from \$1.10 to \$1.25. Hardwood timber and cedar have been raised slightly. At the last session of the N. B. Legislature an amendment was moved but was voted down advocating that the stumpage rate be placed at \$7.00 per thousand feet.

In a serious fire, which visited the village of Carp, Ont., A. E. Exoy, proprietor of the Carp Review newspaper was completely burned out. His loss is \$12,000 which is only partially covered by insurance.

The Toronto Star Weekly is the latest paper to make an advance on its Sunday edition which now sells at ten cents per copy instead of five. It is pointed out by the publishers that the price of newsprint before the war was thirty six dollars per ton and now it is from one hundred to one hundred and twenty dollars with further advances expected in the near future. Canadian daily papers are under the increased production cost of paper alone of four million dollars for the second six months of 1920 as compared with the corresponding period of 1919. Considerable wage increases to labor have been necessary to meet rising costs during the past year and further advances are being pressed upon the publishers by the newspaper unions. Then the postage on newspapers was elevated at the recent session of parliament. For 1921 the increase in postage will represent a million dollars upon Canadian dailies and for 1922 two million dollars. Many dailies have endeavored to take care of augmented costs by revisions made in their advertising rates from time to time, but the point has been reached where it is no longer possible to postpone advances in subscriptions. In the case of weekly and Sunday papers in Toronto and other cities, at the present cost of newsprint the unprinted white paper which goes into the production of each copy, has amounted to more than the selling price of five cents paid by the reader.

Mr. Chas. F. Buss, manager of the Mille Roches plant of the Provincial Paper Mills, Ltd., Mrs. Buss and their son Richard have returned from a delightful trip up the Saguenay. They were accompanied by Mr. and Mrs. Hibbard of Montreal, Mrs. Greter, Miss Anna Greter and Mrs. Rabb of Middletown, Ohio.

The wall board department of Bird and Son's plant at Hamilton, Ont., which has been shut down temporarily for lack of paper, is again in operation.

Mr. James Whalen, with a party of financial and pulp and paper men from the East are in British Columbia. Their visit includes a tour of the plants of the Whalen Pulp & Paper Mills.

#### PRINTERS' PICNIC AT STE. ANNES.

St. Anne de Bellevue was again chosen for the annual picnic of Typographical Union 176 of Montreal, which was held last Saturday under ideal conditions. The Garden City Press, where the Pulp and Paper Magazine is published, was made headquarters, and the fields and athletic grounds were put to good use. Regular train and the Printers' Special brought hundreds of Montrealers to this delightful country spot by the lake shore. After a busy afternoon of games, a dance was given in the main hall of the Press.

#### NORTHEASTERN FORESTERS CONSIDERED AEROPLANES AND EMBARGOES.

The Society of Northeastern Foresters held their annual meeting in Canada this year, arriving in Montreal on the 27th of July and proceeded by train to Berthier where they were the guests of Mr. G. C. Piche, Chief Forester of Quebec, and after lunch visited the Government Nurseries and plantations on the sand dunes along the C. P. R. Railroad. They were much impressed by the good results obtained on the drifting sand, especially in regard to the Spruce trees.

On leaving Berthier they went to Grand'Mere and from there to Proulx, the headquarters of the reforestation work of the Laurentide Company.

Wednesday and Thursday were spent in inspecting the plantations and Wednesday night a business meeting was held. On Thursday night there was a general meeting in which the eighteen members of the Northeastern Society were joined by fourteen Canadian foresters and a joint discussion of the demand for the removal of the embargo placed by the Quebec, Ontario and New Brunswick Governments on wood cut from Crown lands for export was thoroughly discussed.

On Friday morning, the party proceeded to Grand'Mere and inspected the plantation of the Laurentide Company and the mills and were the guests of the Company at lunch. In the afternoon, fifteen of the members proceeded to Lake Edward as the guests of the Commission of Conservation and Dr. Howe, of the University of Toronto, where the experimental Company was visited. Here they saw the sample plots and sample cuttings have been made and were much interested in the results obtained.

Mr. Austin Carey, who represented the United States Forest Service at the meeting, afterwards proceeded to Quebec to discuss the work of the Provincial Government with the Chief Forester. He expects after that visit to go to Montreal to talk over the work of the Riordon Paper Company with Brigadier General J. B. White.

Captain H. A. Peck visited the aviation station of the Laurentide Company in order to inspect the work done in mapping the forests by aerial photography and also took a flight over the limits of the Laurentide Company to have their method explained to him. Captain Peck has been investigating the subject of aeroplanes or seaplanes for use in forestry and logging work for the Riordon Company and he was much impressed with the photographic work done by the Laurentide Company.

Mr. Roland D. Craig and Dr. Swaine, of the Commission of Conservation and the Dominion Entomological Branch, were at the meeting of the Northeastern Foresters and afterwards took a trip in the Laurentide Company's seaplane, piloted by Lieut. Stuart Graham, in order to see for themselves what kind of work could be done in reconnaissance on a large scale such as the Commission of Conservation is doing in a forest survey of Ontario. They were much pleased with the results of their flight and very enthusiastic about the possibilities of the machine.

Worry Less	Work More
Ride Less	Walk More
Frown Less	Smile More
Drink Less	Breathe More
Eat Less	Chew More
Waste Less	Save More
Preach Less	Do More



# The Markets

## CANADIAN TRADE CONDITIONS

Toronto, August 9, 1920.—“No, there is nothing really new in the general paper line,” remarked a leading Toronto jobber to the “Pulp and Paper Magazine” this week. “We have never had so little to do around here and a large number of our staff are on holidays, and those of us here might as well be away for all that we are called upon to perform in the way of work. Deliveries are still very slow, the number of lines which we handle is being depleted and the mills seem utterly unable to catch up. I think prices will remain unchanged for the present month at least. You know, that lately, there have been a number of changes and the increased railway rates, which will shortly go into effect, may add to the cost of the finished product. We are not worrying, however, particularly about that as the consumer will have to assume the extra cost. It will simply be a case of passing it on.”

Regarding the newsprint situation, this was thoroughly discussed at the Imperial Press Conference in Montreal and but little new can be added. One favorable feature, which is being commented upon is the action of Premier Drury in granting certain concessions to the newly organized Spruce Falls Co., who will erect a 150 ton newsprint plant and a chemical plant of equal capacity at Kapuskasing, wherein the Premier stipulated that, at least, fifteen per cent of the output must be furnished to Canadian newspapers. This will form a clause in all future concessions. Companies like the Fort Frances concern will thus not be able to override the Canadian authorities in future. As there will be, at least, three or four new mills go up in Northern Ontario during the coming year, the step taken by the provincial authorities has won warm approval.

Hon. Beniah Bowman, Minister of Lands and Forests, has returned from an extended trip through Northern Ontario and there has been a rumor in Toronto to the effect that the government may establish ground wood pulp mills at various points. It is reported that five are in view. It is a well known fact that the Minister has on more than one occasion remarked that he thought it would prove a good venture for the province, but whether he can get his colleagues to see things that way is quite another proposition.

Deliveries from United States mills on all lines of special papers are coming in better than they have for sometime. Business is slackening off in a number of lines over there and orders placed by Canadians months ago are now receiving attention. One Toronto firm, which sells for several new England mills stated this week that they were well satisfied with the manner in which deliveries are being made.

Board and tissue mills are still getting farther and farther behind in shipments and cannot promise filling present orders short of three months. The board prices, which went into effect about a month ago, are being continued during August, but whether there will be another raise in September depends very much

on how the pulp situation looms up. There is a great deal of uncertainty regarding pulpwood, deliveries and the fall supply of labor. The high figures prevailing are causing more settlers than ever in the north to go into the business of cutting and there are more purchasers out, with the idea gaining ground that considerable speculation is being indulged in.

There is a rumor that the Eastern Lands Department of the Canadian National Railways, which has been operating a rossing plant at Foleyet, may establish a kraft pulp mill at that point, of one hundred tons capacity. Freight rates have risen to such a point that the wood cannot be taken out and shipped to Thorold and other points at a profit. The distance is too great.

Paper box manufacturers are running away behind in orders owing to shortage of board and the fact that help is at a low ebb. Many girls leave during the summer months either on a holiday or to take positions in hotels at Muskoka and will not return until the fall. Manufacturing stationers have the same complaint.

The new machine in the Sturgeon Falls plant of the Spanish River Pulp and Paper Mills is expected to be in operation late this fall and this will add sixty tons to the output of newsprint. There will be, at least, four new pulp plants built in Northern Ontario during the coming year and when these are in operation, it is expected that the present acuteness in the pulp and paper area may be to some extent ameliorated. The freight movement has somewhat improved during the past few days, but the fuel outlook is still causing considerable apprehension on the part of some mills.

The Ontario government is taking action against the Russell Timber Co. for the recovery of money in connection with the timber probe. The plundering of limits by taking out a mining license and then cutting off the pulpwood will be checked. The writ just issued by the Attorney General is for the cancellation of certain patents in various districts alleged to have been wrongfully obtained for the value of pulpwood, or other wood, removed illegally, and the Government will seek to restrain the Russell Timber Co., of Port Arthur, from further cutting on patented or Crown lands.

There has been an innate feeling in pulp and paper circles for some time, that the dearth of many lines of paper will this fall be greater than ever. No one cares to make any predictions and, in the meantime, mills and jobbers are doing their best to cope with the situation and that is the best which can be put forth to overcome a state of affairs, the like of which has never been faced in the trade and a repetition of which will not eventuate again unless there is another war in Europe.

The American Paper and Pulp Association now has a regular bulletin. Our readers will frequently have an opportunity to read the good things we shall quote in the Pulp and Paper Magazine.

### NEW YORK MARKETS

New York, August 7.—(Special Correspondence)—The mid-summer lull in demand for most kinds of paper continues in New York, and, according to all reports, in other leading consuming centres of the States, yet prices are being well maintained with no visible signs of quotable weakness in any corner of the trade. Buyers are still confining their purchasing activities to hand-to-mouth lots of paper, absorbing merely supplies that they directly need, and there isn't near the snap to the demand that there was recently. Manufacturers and dealers view the prevailing situation as one that was well nigh inevitable at this time of the year, and are mostly confident regarding the future of the market. On all sides one hears predictions of an even tighter supply condition in the fall than existed in the spring and of higher prices on virtually all grades of paper. Trade factors cannot see what is going to prevent values from rising to new heights when consumers resume buying on a more normal scale, as they invariably do in the autumn, especially since unsold stocks of paper the country over are almost negligible. That buyers will increase their operations in the market as usual this fall seems assured. The consumption of paper in every direction continues heavy and there is every indication that the customary jump in consumption will occur again this autumn. Under the circumstances it is therefore not surprising that sellers of paper are pursuing a policy of waiting at the moment and are not exerting pressure on consumers.

Probably the feature of the current newsprint situation is the demand for sheet news. Buyers are actively seeking supplies of print paper in sheet form and are finding few sizable accumulations available, with the result they are meeting the prices asked without stopping to haggle over their fairness. Sheet news for prompt delivery is readily fetching 14 cents per pound, and even this price has been exceeded in some cases. Jobbers have practically no stocks to speak of and are anxiously inquiring of mills for shipments. The movement of newsprint in rolls into consuming channels continues at a steady pace and prices, both on contract and spot deliveries, rule firm. Transient buyers are paying 11 to 12 cents per pound and are absorbing the great bulk of supply offered in the open market, while the contract basis is maintained at from 5.75 cents upward at mills.

The book paper market is firm to a pointed degree. Most manufacturers are altogether out of the market, having their output foresold and being unable to accept additional orders, and there is a tremendous potential demand going unfilled. Mills are shipping out their product on a pro rata basis as quickly as it becomes available and there is no question that a much larger business in book papers could be easily done were the necessary paper to be had. Super book is selling in the open market at 19 to 20 cents per pound, machine finished at 17 to 18 cents and coated book papers at from 21 cents upward.

Demand for boards is on the increase and prices display firmness. Board mills are in much the same position as book paper manufacturers. Most of them are outsold for several months and have but small lots to offer for nearby shipment. Prices range around \$125 per ton at mills for news board and \$115 for plan chip. Fine papers are quotably steady and are moving toward consumers in consistent fashion. Wrap

pings and tissues enjoy a good demand and rule firm in price.

**GROUND WOOD.**—There is still a large unfilled demand for ground wood and offered supplies are finding a ready market at high prices. Dealers and mill agents in New York are frank to say that they are unaware what actual market values are owing to their having little or no pulp to sell and because of the lack of transactions by which to gauge values. It is known, however, that sales have been accomplished at well in excess of \$150 per ton in some instances, while \$140 to \$150 is freely bid by consumers, who are locating but small tonnages at such prices. Unsold accumulations are very light and those mills having stocks are generally holding pulp for their own use.

**CHEMICAL PULP.**—Paper manufacturers are still limiting their buying of chemical wood pulp mainly to tonnages actually required for direct consumption, and current demand consequently does not begin to be as keen as it was some time ago. Nevertheless the price tone is firm and efforts to discern some sign of easiness have been fruitless. But little sulphite of any grade is being offered in the open market and the scattering lots made available to transient buyers do not remain long unabsorbed in the market regardless of the prices asked. Receipts of pulp from Scandinavian countries are somewhat heavier than earlier in the year yet nearly all of this supply is against contracts and therefore is unobtainable by buyers looking for fresh supplies. Foreign unbleached sulphite of No. 1 quality is quoted at around 10.50 cents a pound on the docks here, while imported bleached sulphite is priced in the neighborhood of 17 cents and Scandinavian kraft at 7.75 to 8 cents. Domestic pulp are quotably unaltered but it is significant that most sales are made at the upper edge of quoted ranges.

Arrivals of foreign chemical pulp at New York this week included 800 bales of sulphite from Christiania.

**RAGS.**—Demand for papermaking rags is quite characteristic of the season. Mills are purchasing in hand-to-mouth fashion, generally confining their orders to stock directly needed, and, with the exception of new cuttings and some specialty grades, rags are available to paper manufacturers at very nearly any prices they care to bid so long as they are within reason. A strong item is white shirt cuttings. There have been sales of No. 1 white shirt cuttings at as high as 25 cents per pound at mills, and offers of 24 cents are described as numerous. Old whites also are quotably firm at a price basis of from 13 cents upward per pound, depending on the packing, while washables, new unbleached muslins, white lawns and new silesias are in ready call and firm in price. Roofing rags are easy and felt manufacturers in the East are securing fairly large shipments at 2.25 cents at shipping points. Old thirds and blues are available to mills at around 4.25 cents f.o.b. shipping points for repacked stock.

Receipts of foreign papermaking rags at this port during the current week included 1,158 bales from Bordeaux, 345 bales from Glasgow, 581 bales from Rouen, 525 bales from Bristol, 220 bales from London, and 18 bales from Antwerp.

**PAPER STOCK.**—The waste paper market is active in nearly all its branches. There is a steady call for supplies from paper and board mills and prices on practically every grade of stock show a distinct upward trend. Some grades have scored further advances this week. White blank news cuttings,



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which are sought by consumers in lots in excess of offered supplies, have sold at 7 cents per pound, while soft white shavings of No. 1 quality have fetched 7.50 cents, hard white shavings 8.50 cents and old No. 1 packing of kraft 6 cents. Demand for folded newspapers holds up well and mills in frequent cases are paying better than 2.30 cents per pound at shipping points. There is also a good movement of mixed paper at around 2 cents for No. 1 packing. Manila papers, both old and new, are sought by consumers and are bringing high prices, while the situation in flat stock seems to be looking up after a period of relative quietness.

Arrivals of miscellaneous paper stock at New York from foreign sources this week included 667 bales from Rotterdam, 657 bales from Belfast, 253 bales from Manchester, 120 bales from Dublin, and 38 bales from Liverpool.

**OLD ROPE AND BAGGING.**—There is but little demand emanating from consuming sources for old ropes and bagging and prices on these commodities evince a downward tendency. No. 1 scrap bagging is readily available to mills at 2.60 cents a pound at shipping points and No. 1 gunny bagging is offered at 3 cents. Old No. 1 Manila rope is selling in the neighborhood of 7 cents per pound, with some purchases by consumers recored at lower levels.

Arrivals of foreign rope at New York this week were 178 coils from Rotterdam, 47 bales from Bordeaux, 844 coils from Hull, 107 coils from Bristol, and 93 bales from Copenhagen. Receipts of foreign bagging were 210 bales from Antwerp, 231 bales from Manchester, 63 bales from Ronen, 110 bales from Copenhagen, and 67 bales from Liverpool.

### VISITED CANADIAN PULPWOOD OPERATIONS.

New York, August 6.—E. A. Sterling, manager of James D. Lacey & Co., of New York, has just returned from an extended business trip to the province of Quebec. As the guest of James Playfair, of Midland, Ont., who is a well-known lumberman and ship owner of Canada and President of the Great Lakes Transportation Co., Mr. Sterling visited and inspected the properties of the Canadian Pulpwood Corporation, Ltd., on the Gaspé Peninsula, P.Q. Mr. Playfair took the party down the St. Lawrence on his steam yacht "Pathfinder," stopping first at Oswego and Cornwall, at the pulpwood distributing yards of the Cornwall Terminal Company, then en around the Gaspé Peninsula to New Carlisle and Gascapedia, on the Bay of Chaleur where the docks and pulpwood producing operations of the company are located. The timber holdings on the Gaspé Peninsula cover an area of 275 square miles. The pulpwood is loaded at New Carlisle at the company's docks and shipped by steamer to the terminal yards in cargoes of 1,000 cords each. Mr. Sterling is a director of the Canadian Pulpwood Corporation, Ltd., which has recently been refinanced by James D. Lacey & Co., through a \$250,000 bond issue. Included in the party were Walter Meigs, president and general manager, Stanley D. Pearce, vice-president of the company; D. L. White, of Midland and John Burrougham, and Edward P. Farley of Chicago. The party also enjoyed the unusual sport of salmon fishing on the Grand Gascapedia River.

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# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

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## TABLE OF CONTENTS

### Editorial:

Ontario and her forests .....	865
The consumer pays the freight .....	866
The pulp and paper handbook .....	866
Bothwell in Norway .....	866

### Special Articles:

The newsprint situation .....	867
Pulp and paper course at Syracuse .....	871
Seeing paper machines made in Canada .....	873
Specifications for lime .....	875
Review of recent literature .....	877



### News of the Industry:

Northcliffe controls Gulf Pulp and Paper Co. .....	872
Backus buys Kenora power plant .....	872
British trade news .....	878
Pulp and paper news .....	879
Kapuskasing mill assured .....	880
The price of newspapers .....	880
Paper mill for Ogdensburg .....	884
Exports gained 60 per cent. for April .....	886

### The Markets:

Canadian trade conditions .....	881
New York markets .....	882

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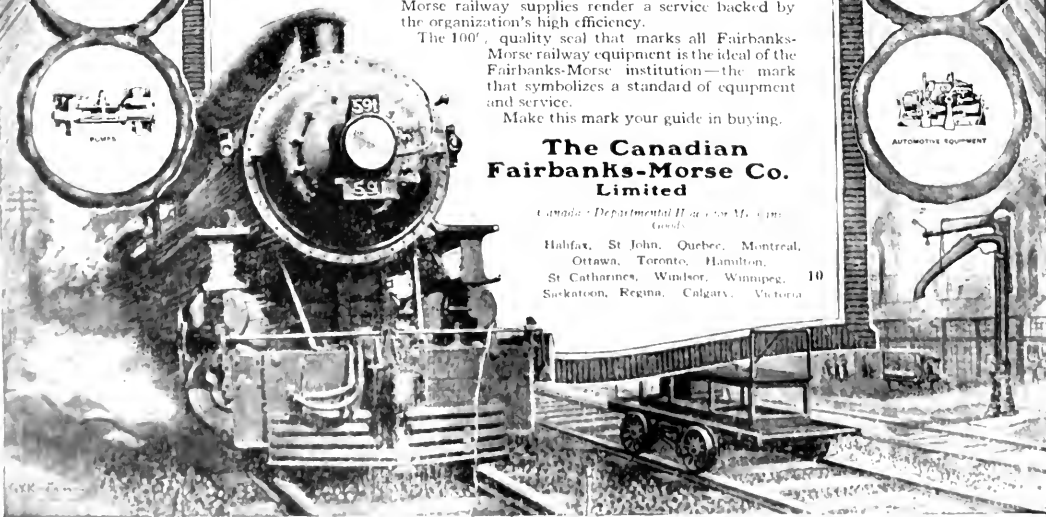
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# EDITORIAL



## ONTARIO AND HER FORESTS.

Ontario has a so-called Farmer Government, elected largely by the influence of the United Farmers of Ontario and the Labor Unionists of that province. The laboring men of Ontario, as elsewhere in Canada, are largely dependent on the forest for raw material with which to work. The workman has yet to learn how much his job depends on plenty of trees. The farmer has looked on woodland from two points of view, with the idea either of getting rid of it so as to plant the land in other crops, or of turning it quickly into as much cash as would pay a little profit on the cutting of it. He has not, in Ontario or elsewhere, in Canada, looked on the forest as a national asset, of which a part has been entrusted to him.

The Ontario government has already had the forestry problem of that province brought up for attention in several forms. First, there was the investigation of cases where timber operators did not pay their full dues for timber taken out. The result, so far, seems to indicate that there has been a lack of proper administration of Crown lands, a laxness in making returns and a tendency on the part of certain lumbermen to report less timber than was actually taken out. Something will probably be done to any who may be found guilty of misconduct, and there will likely be more careful work in the future on the part of the government.

Another case that has attracted some attention, and even drawn a little fire, is the lease of timber rights on lands granted to the Grand Trunk by the province of Ontario, but which were to revert to the province in the event of the railway being absorbed by the federal government. Cutting rights had been given for a ridiculously low figure. Now the Canadian Government Railways own the Grand Trunk and Ontario claims the extensive lands. But a pulp company has bought the pulpwood without the formality of public tender. Opponents of the provincial government maintain that the Premier and Minister of Lands, Forests and Mines have agreed to a proposition which is cheating the people. The Premier has replied that the lands have not been returned to the province as yet, and that his government has agreed to the best terms that could be made in the circumstances and that the pulpwood will return practically a dollar a cord instead of forty cents as was stated by an opponent. That is little enough, even if a rail haul will furnish some addi-

tional revenue. Despatches fail to mention what cutting regulations must be complied with, which is really the most important phase of the matter. In this case, however, the Ontario government is not altogether a determining factor.

Two other cases have come up where the Ontario government has had a chance to show its attitude toward the forest and its conception of a forest policy that will really benefit the people without hindering the growth of industry or discouraging private enterprise. It must be said that the Farmers' Party is showing a considerable discrimination and, with some encouragement from the people, will develop a really good forest policy. A large part of the discrimination is no doubt the result of careful attention and considerable advice from the newspapers of the province, and shows that if the papers will take a determined and intelligent stand for the best possible administration of the forest, Ontario may catch up to, and even pass, Quebec in this regard.

To be more specific. Certain American interests, which have a mill in Ontario and some time ago obtained a concession of some 1,860 square miles of timber, have applied for an additional grant of 2,500 square miles, including water power rights. The government is being urged to inquire why the first grant has not been developed as stipulated in the agreement before making further leases. Here, again, the question of public tender comes up, but this time it is purely a provincial matter, and the Premier has declared for a policy of competition in such cases. There is a lot of newspaper opposition to the granting of further pulpwood leases under conditions which do not give the maximum protection and benefit to newspaper publishers and the public. Some fear seems to have arisen that leasing an additional 2,500 square miles would be unduly concentrating Ontario timber under control of one set of interests. If these so-called English River limits are obtained by the company, the town of Kenora, which has already voted some concessions and seems very anxious to get the industry, will doubtless be the site of the new mill. The province is inclined to go slowly and cautiously in the matter, especially as the limits, which are applied for as pulpwood, contain one of the best stands of white pine in Ontario.

The last big deal is the transfer of concessions made some time ago from the Spruce Falls Pulp & Paper Co. to the Spruce Falls Company, a new Canadian concern, backed by the Kimberly-Clark Co. of Wis-

consin. The old company was to pay 75 cents per cord for spruce pulp wood, but in transferring the concession, the rate is increased to \$1.15 for spruce and \$1.60 for certain wood along the railway. In addition, the company is required to destroy all brush in a manner satisfactory to the government, and to reserve up to 15 per cent. of its newsprint production for sale to Canadian papers. From the discussion of slash disposal at the Forestry Conference last winter, the company is really paying an additional 50 or 75 cents a cord. This is one of the most important steps that has yet been taken in Canada in the administration of Crown lands, and Ontario is to be heartily complimented for taking this stand. We hope a real forester will have oversight of the operation, one with sense as well as training.

The clause reserving newsprint for Canadian consumption is another mile-stone that will delight at least the publishers, and will hardly cause paper makers to worry.

Another interesting clause in the Spruce Falls agreement is that retention of control of the townsite to the people.

It looks as if Ontario is at last awake to the value of her forests and the need for scientific, sensible administration.

#### THE CONSUMER PAYS THE FREIGHT.

A prominent railway man in Canada recently made a public statement to the effect that the proposed increase in freight rates would add only six cents to the price of a suit of clothes, and other things in about the same proportion. He evidently took the extra freight charge on a 500 pound case of garments, and divided by the number of suits, which is not the whole story by any means.

A similar tale might be told of paper. If it were only the couple of cents per hundredweight on the finished product the burden would be easy, but the manufacture of paper involves the receipt of about four tons of material for each ton of finished product, and some of this is on long haul traffic of heavy commodities. It must also be borne in mind that each contributing industry has to pay freight on its coal and other raw materials, coal, iron ore, steel, wool, cotton, oil and also materials of construction. Furthermore, in the calculation of profits, a percentage is added because of these increased costs, and when these are made up to even cents and multiplied at each step, the ultimate increase is considerable. An instance may be given from a recent editorial in the Canadian Mining Journal, in which it is shown that an increase of 27 cents per ton in the cost of producing coal may properly amount to \$1.50 or more by the time the consumer gets his black diamonds.

With everybody asking for better railway service

the public has little reason to refuse to pay it, but it won't help matters to look at the increase through an inverted telescope.

#### THE PULP AND PAPER HANDBOOK.

For nearly a year the Canadian Pulp and Paper Association has been collecting authentic data on the industry. This appeared in print last week under the title "A Handbook of the Canadian Pulp and Paper Industry." It is largely the work of Mr. Edward Beck, who has charge of the publicity work of the Association and is an excellent publication, both for what it contains and the appearance. The book is 6 by 9 inches on coated stock, with an embossed cover in two shades of gray. The printed page is enclosed in a thin red border rule. There are 121 pages and 21 illustrations. The chapter headings are as follows: Paper-Making in Canada; A Census of the Pulp and Paper Industry; Pulp and Paper Securities; Exports of Pulp and Paper; Imports of Pulp and Paper; Canada's Pulpwood Resources; Canada's Water Powers; Newsprint Production in Canada; How Paper is Made; Pulp and Paper Facts; Pulp and Paper Mills in Canada; The Canadian Paper Trade Association; The Canadian Pulp and Paper Association.

There is one curious mistake, but no one will notice it who hasn't been there, and as it does not affect the accuracy of the statements we shall leave it as a puzzle. We can't laugh because a friend has just pricked a hole in our pride in the International Number by pointing out that cypress trees are not pulpwood as yet.

#### BOTHWELL IN NORWAY.

On a hot day in August the editor received a card from J. A. Bothwell showing the snow and ice about a Norwegian fishing village. It nearly gave us a chill. Mr. Bothwell's message will interest our readers: "We (J.A.B. and G.E.S.) are having a most entertaining and instructive trip, and so far we have seen nothing which would lead us to believe that we in Canada will have to go out of the paper business any time in the near future."

#### CORWERS.

The average cut per acre in Quebec for the last twenty years has been about six cords per acre. As the wood is noticeably smaller each year, the next ten-year average will be less than six cords. The thinning out of a properly conducted forest would be about five cords, and the final cut, after 50-75 years, 30 to 40 cords.

Agitation continues for a pulp and paper mill in the Kootenay district, near Nelson, B.C. A stand of 13,700,000 cords of available pulpwood is claimed.

# The Newsprint Situation

By JOHN M. IARIE.

Manager, Canadian Daily Newspapers Association,  
Toronto.

The newsprint situation in Canada is so closely related to and affected by the newsprint situation in the United States that any intelligent discussion of the former must include consideration of the latter and the use of figures covering supply and demand in both countries.

## Relation Between Supply and Demand.

The present demand in Canada and United States is about 600 tons per day in excess of the combined production. Part of that production is not available for use in North America as 400 tons per day is exported to other continents. On the other hand, approximately 80 tons per day is now coming into the United States from Norway and Sweden. Therefore, treating Canada and United States as one unit from a supply standpoint, the demand exceeds available supply by approximately 900 tons per day or 270,000 tons per year. That disparity would be much greater but for the fact that 300 tons per day is being produced temporarily on machines that have been diverted from other grades of paper because of the highly profitable prices now obtainable for newsprint in the spot market in the United States.

Until recently a small portion of the excess demand was being met through the depletion of stocks on hand at the mills and in newspaper offices. A few newspapers had accumulated reserve stocks against such a situation as developed. But what relief was obtainable from such sources has been exhausted, and stocks on hand and in transit are now below the safety line.

The great bulk of the excess demand is simply not being filled. Certain mills have cut the requirements of their customers in the United States by from 10 to 15 per cent. Some newspapers thus affected have been able to secure additional tonnage in the spot market, but many of them, and others which have been caught without contracts, are making drastic temporary reductions in consumption.

## Effect of Excess Demand on Selling Prices.

These conditions have created a seller's market as regards price. Whereas newsprint was selling as low as \$35 per ton at the mill in 1916, present contract prices, except in the case of three mills, are at an average rate of \$120 per ton for the second half of 1920. Newspapers without contracts or with contracts for insufficient supply are, in effect, bidding against each other in the spot market for what little tonnage is available there. Individual sales in the spot market have been made at as high as \$360 per ton, but current prices for the bulk of the sales are around \$250 per ton. Large newspapers with contracts at \$120 per ton for 85 per cent of their requirements could pay \$250 per ton in the spot market for the other 15 per cent and get off with an average cost of \$140 per ton. And with advertising offering in unprecedented quantities, or faced with the competition

of a newspaper that has an ample supply, many publishers have been willing to increase their average cost to that extent in order to secure 100 per cent of their requirements.

In Canada newsprint prices were under judicial control for the three years ending April, 1920. For the first eleven months of that period the price was \$50 per ton; then, during the early part of 1918, it was \$57 per ton. An increase to \$66 per ton went into effect on July 1, 1918, and another increase to \$69 per ton became effective December 1, 1918. That price remained in effect to December last, when the publishers and most of the manufacturers got together, composed their differences and agreed upon a price of \$80 per ton to July 1st, and the lowest export price thereafter.

As the Canadian consumption is less than 15 per cent of the domestic production, Canadian newspapers on the whole have not had as great difficulty in securing supplies as the newspapers of the United States. There was extreme difficulty on several occasions in Manitoba and Saskatchewan. In January all the daily newspapers of Winnipeg were suspended for five consecutive days, while other newspapers in Western Canada were on the verge of suspension.

Subsequently, in June, 25 per cent. of all the daily newspapers in Canada were facing the possibility of suspension after July 1st owing to inability to secure any assurance of supply after that date, even at current contract prices for export to foreign countries. The trouble then was largely confined to three mills. Two of the three agreed later to continue supplies and other manufacturers stepped in at great inconvenience to themselves to take care of the Canadian customers of the third mill.

It is generally recognized and frankly admitted that present contract prices bear little relation to cost of production. Reports of the Government Auditor under the recent Newsprint Control indicated that during the latter part of 1919 production costs in the more efficient Canadian mills were running around \$50 per ton. December last is the latest month for which audits were made, and undoubtedly there has been a substantial increase in cost since then. But present prices are such as to take care of all increases in cost and yield hitherto undreamed of profits to the manufacturers. I am not saying that in a spirit of complaint. Canadian publishers agreed last fall to pay the current export prices after July 1st. They are good sports and will not wince on their agreement.

## Immediate Cause of Present Situation.

The immediate cause of the present situation as regards both supply and price is an unprecedented increase in advertising during 1919 and 1920 to date, following closely upon a substantial increase in circulation during the war years.

In the United States during the first two years of the war, 114 daily newspapers, each with a circulation exceeding 50,000 copies, had an average increase in circulation of 19 per cent, while ten foreign language

\* An address at the sessions of the Imperial Press Conference, Ottawa, August 5-7, 1920.

daily newspapers, each with a circulation exceeding 50,000 copies, had an average increase of 67 per cent. Circulation continued to increase during 1917, the average increase during that year being about 13 per cent. There was a falling off during 1918, but towards the close of that year a period of unprecedented advertising volume commenced.

The total advertising lineage in the newspapers of New York and Brooklyn was 37 per cent greater in 1919 than in 1918; in Chicago the increase was 40 per cent; in Detroit it was 42 per cent.

Individual newspapers in each of the cities mentioned had much larger increases than the average for the city as the following figures show:

	Per Cent.
New York Times	44
New York Sun	55
New York Tribune	95
Chicago Tribune	49
Chicago American	70
Detroit News	45
Detroit Free Press	53

Grouping the eighty-nine daily newspapers in the eighteen leading cities of the United States, the increase in advertising volume during 1919 as compared with 1918 was 39.3 per cent.

That increase is being continued and enlarged during 1920. Grouping again the eighty-nine daily newspapers in the eighteen leading cities in the United States, the volume of advertising in the first quarter of 1920 was 39 per cent greater than in the corresponding period of 1919.

But these increases, first in circulation and then in advertising, are but two phases of a gradually developing situation that has ultimately created the present disparity between supply and demand.

#### Development of Excess Demand in the United States.

In 1880 the newsprint production in the United States was approximately 110,000 tons and the consumption was about 75,000 tons. By 1899 production had increased to 570,000 tons, by 1904 to 900,000 tons and by 1909 to 1,175,000 tons, consumption during 1909 being about equal to production. It was at this point that newsprint consumption in the United States began to exceed domestic production. By 1914 production had increased by only 129,000 tons and the demand during that year necessitated the importation of 278,000 tons, exports being only 44,000 tons. During the next five-year period, ending December last, the increase in production averaged only 1 per cent per year, and during 1919 imports exceeded exports by over 500,000 tons. Production in the United States during 1920 will be about 1,475,000 tons. At the present rate, consumption will be about 700,000 tons greater, and there will be an unfulfilled demand of about 270,000 tons.

The Newsprint Service Bureau is authority for the statement that the annual consumption of newsprint in the United States has increased from three pounds per capita in 1880 to nine pounds per capita in 1914 and thirty three pounds per capita in 1919.

#### Consumption by Sunday Newspapers.

The development of the Sunday newspaper was an important factor in this increased consumption in the United States. The term "Sunday newspaper" has quite a different meaning in Great Britain and the

United States. In Great Britain it is possible for one to buy a Sunday newspaper that is a **newspaper**. In the United States, if one desires a Sunday newspaper he must accept with it a heterogeneous mass of illustrated pages, fashion plates, automobile supplements, book reviews, magazine sections, etc., aggregating in some cases as many as 150 or 160 pages.

The Chateau Laurier news stand has copies of only four of the latest issue of the Sunday newspapers of the United States. Those four do not include all the more bulky ones, but at that they average 90 pages of standard newspaper size and their average weight is 1 1/4 pounds. Having regard to their respective circulations, they represent an aggregate consumption of newsprint for the one issue of over 1,000 tons, or over 50,000 tons per year.

#### Other Factors Contributing to Partial Independence of United States on Imported Newsprint Supplies.

But certain factors in addition to increased domestic demand have operated to bring about the partial dependence of the United States on imported newsprint supplies, to which I have already referred.

The first of these was that as a result of wasteful cutting and lack of adequate fire protection or any measure of reforestation, the pulpwood forests of the Eastern States are rapidly approaching exhaustion.

Another factor was the growing differential in production costs in favor of competing mills in Canada. As the pulpwood forests of the Eastern States became more depleted, cutting and driving costs increased and power and water difficulties were multiplied. Canadian mills, on the other hand, had large supplies of raw materials at their doors. As far back as 1911 that differential in production costs in favor of Canadian mills according to the Tariff Board of United States was \$4.50 per ton—equivalent to about 15 per cent of the then current production cost in United States mills.

These two factors acted as a deterrent on the extension of existing mills or the establishment of new mills in United States. As a result, production in 1919, notwithstanding the diversion of machines from other grades of paper, was less than 6 per cent in excess of 1913 figures—an average increase for the six years of less than 1 per cent.

#### Growth of Production in Canada.

The development of the newsprint industry in Canada during the past ten years is quite a different story.

The Provincial Governments having jurisdiction over the pulpwood forests of Canada have encouraged development by leasing Crown lands and water powers at nominal rates, by establishing fire protection systems, by building reservoirs at head waters, and by certain regulations as to the cutting of trees.

About ten years ago the Governments of Ontario, Quebec and New Brunswick amended the regulations covering leases of Crown lands so as to prohibit the export of pulpwood cut on such lands except in the form of pulp and paper. Up to that time Canada's exports of pulpwood to the United States had greatly exceeded her exports of pulp and paper to that country. In 1908, for example, the exports of pulpwood were 900,000 cords, while the pulp and paper exported to the United States represented only 250,000 cords of pulpwood. Since then the situation has been re-

versed until in the last fiscal year the exports of pulp-wood were 840,000 cords while the pulp and paper exported to that country represented over 2,000,000 cords.

These various factors contributed to a rapid development and expansion of the Canadian Newsprint Industry. Production increased from 150,000 tons in 1909 to 350,000 tons in 1913, 608,000 tons in 1916, and 808,000 tons in 1919. The production in 1920 will be almost 900,000 tons. These figures include certain quantities of newsprint used for paper hanging.

#### Exports of Paper and Pulp from Canada.

Members of this conference will be interested in the ultimate disposition of this enormous production.

The latest official figures of exports are for the twelve months ending March 31, 1920. During those twelve months approximately 100,000 tons were consumed in Canada and 713,625 tons were exported; 23,564 tons went to the United Kingdom, 32,173 tons went to Australia, 10,526 tons went to New Zealand, 4,226 tons went to British South Africa, and 629,152 tons went to the United States.

Comparing this distribution of exports with the figures for the last fiscal year preceding the war, the exports to the United Kingdom show an increase of over 300 per cent, those to Australia an increase of 150 per cent, those to New Zealand an increase of 20 per cent, and those to British South Africa a decrease of 40 per cent. The increase in exports to the United States was 460 per cent.

Canada also exported during the last fiscal year 339,382 tons of mechanical pulp and 130,096 tons of chemical pulp. Of the mechanical pulp 202,269 tons went to the United States, and 96,911 tons went to the United Kingdom. Of the chemical pulp, the United States received 341,535 tons, and the United Kingdom received 42,308 tons. The exports to the United Kingdom compared with 1913 figures show an increase of 30 per cent in mechanical pulp, while exports of chemical pulp were practically nil during the years 1913-1916.

#### Remedies for the Present Situation.

And now as to the remedies for the present situation, particularly as regards supply:

There is, of course, the possibility of a general curtailment of business which would have an immediate effect upon the consumption of newsprint. No person desires that remedy.

Apart from that, the situation would probably right itself in the course of time. The enormous profits in newsprint manufacture at present and prospective prices would attract capital and bring about greatly increased production. On the other hand, if prices continue to go up, there must be eventually a contraction in consumption. With increases in subscription rates to 10 cents for Sunday newspapers and 3 cents or 5 cents for week day issues, there would be a lessening of duplication in circulation, particularly if the value of money were to increase and 10 cents or 5 cents were to mean anything like it did 6 or 7 years ago. There is a limit also beyond which advertising rates cannot be increased without materially reducing volume. As advertising rates are further increased there will be a tendency to scale down the size of advertisements and to use more discrimination in the selection of newspapers. These factors and

the continuous and increasing pressure of rising costs would force many more newspapers out of business, releasing the tonnage they are now consuming. If the newsprint manufacturers were to take advantage of the present situation and that of the immediate future to pursue a policy of continually forcing up prices without regard to cost of production or ability of the newspapers to assimilate or pass on, they might find ultimately that they had killed the goose that had been laying the golden eggs.

But relief in that way is not a very pleasant prospect, particularly as it would be far distant and in the meantime one's own newspaper might be among the many to fall by the way.

Many are urging united action by publishers to reduce consumption arbitrarily. Personally, I have not much faith in that. The newspaper business is highly competitive in individual cities, and in many cities one or two newspapers will be in a preferential position as to newsprint supply either through a favorable contract or through the ownership of a mill. Such newspapers are in a position to set a rather fast pace, and in many cases other newspapers in the same city will feel they must follow suit at any cost.

The real solution in my judgment lies in such increase in production as would eliminate the spot market and create a surplus supply. Coupled with this, there should be adequate measures of pulpwood conservation and reforestation. Most Canadian publishers would welcome such measures even although they did involve increases in newsprint prices for a time. They would effect economies in the long run and ensure continued supplies.

#### Prospects for Increased Production.

Let us consider, then, the prospects for a remedy through increased production.

On the first of this month the rated daily capacities of Canadian and United States newsprint mills were 2,834 tons and 4,751 tons respectively—a total of 7,585 tons per day, or 2,275,500 tons per year. Three Canadian and two United States mills are scheduled to instal new machines during the last five months of this year, adding 190 tons per day to the Canadian capacity, and 150 tons per day to the United States capacity. During 1921 additional capacity of 580 tons per day is scheduled for Canada, and 225 tons per day for the United States. If these installations take place as scheduled, and all machines now running on newsprint are retained on that grade of paper, the aggregate daily newsprint capacity on January 1, 1922, will be 3,604 tons in Canada and 1,976 tons in the United States—a total of 5,580 tons, or 2,574,000 tons per year. That would represent an increase over present aggregate daily capacity of 995 tons per day, or approximately 300,000 tons per year. That increase is only 10 per cent more than the present excess of demand over available supply in Canada and the United States. It does not allow for any increase in demand during the next seventeen months, and, as already stated, it could take care of the present excess demand only if all machines now producing newsprint for consumption in Canada and the United States continue to do so and all the new machines referred to above are used in producing newsprint for consumption on this continent.

If the present excess demand were to fall away

to any appreciable extent, there would be withdrawn from the market part or all of the 300 tons per day now being produced temporarily on machines diverted from other grades. If that were not sufficient to maintain an excess of demand over supply, the manufacturers of this continent could easily do so under present conditions by yielding to the pressure for newsprint from other continents. I do not intend any offense to the manufacturers in that statement. Possibly publishers would do the same under similar circumstances. But it would be well for publishers to face the facts squarely and realize that there must be a very substantial increase in production before the present situation will be much improved.

As a matter of fact, it is reported that about 25,000 tons now being supplied in the United States is to be diverted to Australia on January 1st, while it is known that part at least of the product of one of the new machines is to be shipped to England.

#### How North America Production is Marketed.

In this connection a survey of the channels through which the newsprint production of Canada and the United States is marketed may be of interest as indicating what might be termed the potential mobility of the newsprint movement.

The export business of five Canadian companies, producing 32 per cent of the total Canadian production, is handled by and through the Canadian Export Paper Co., Ltd., which is an organization of the manufacturers themselves. The entire product of two other Canadian companies, producing 30 per cent of the total, is handled through Geo. H. Mead & Co., Dayton, Ohio. The export business of two other Canadian companies, producing another 17 per cent of the total, is handled through an associated newsprint manufacturer in the United States. These three groups represent 79 per cent of the total Canadian production. Another 7 per cent is produced by a mill owned by the Chicago "Tribune" and established to supply its needs; and another 5 per cent is produced by a company that is a subsidiary of a newsprint company in the United States and sells its export product through the parent company.

Turning now to the United States, one company produces 27 per cent of the total and another 15 per cent. Still another produces 7 per cent, but controls the distribution of half as much more tonnage made by a subsidiary company in Canada. These four companies therefore produce 54 per cent of the total production in the United States, while two of them control in addition the distribution of 25 per cent of the total Canadian production. It may be noted that another of those four companies is now building a mill in Canada that will commence operations next year and produce 7 per cent of the then Canadian production.

Apart from these four companies and the 51 per cent of the total production in United States which they produce, another 13 per cent of the total production is not a factor from an export standpoint as it is produced in mills owned by newspaper publishers.

#### Newsprint for the Empire.

These facts regarding the ownership of Canadian mills and the channels through which the production in Canada and the United States is marketed, coupled with the situation as to supply and demand, will

throw some light on the question many members of this conference have asked, viz: Why the publishers of other parts of the Empire are denied newsprint supplies when Canada is exporting over 700,000 tons per year.

There are other factors of a purely commercial character operating against the exportation of newsprint overseas.

The market in the United States is close at hand, ensuring prompt deliveries, quick return of cores and quick collections. There is no trouble about selling, as the United States publishers are coming to the offices of Canadian manufacturers pleading for paper. Sales in the United States market are paid for in the funds of that country, which are at a substantial premium in Canada, and in most cases shipments are by rail, involving less trouble to the shipper and less cost in wrapping than shipments overseas.

Another factor is the partial dependence of the Canadian newsprint industry on the United States for coal.

#### The Real Solution of the Problem.

The real solution of the present situation and a means of providing for the future pulp and paper requirements of the British Empire are suggested by the general topic for to-day's discussions at this conference: "Empire Partnership." There should be a partnership in pulp and paper development between Canada and the other parts of the British Empire—Canada providing the pulpwood and water power, and her people joining with the people of the United Kingdom and the Overseas Dominions in providing the capital for the development of those natural resources.

With a few notable exceptions, British capital which has been such a factor in other phases of this country's development has played no part in the development of the Canadian pulp and paper industry. It has been stated by parties who should know that 75 per cent of the capital invested in that industry is American capital.

#### British and Empire Capital for the Development of Canada's Pulp and Paper Industry.

While appreciating to the full the benefits to Canada through the development of her pulpwood resources by American capital, the Governments and people of this country would welcome most heartily and co-operate in their further development through an Empire partnership such as I have suggested. And in promoting, and themselves entering into, such a partnership, the publishers of the Empire would be adopting what seems to be the only means of ensuring their future pulp and paper supplies. For I would like to emphasize this point: that serious as the present situation is, it will assuredly become more serious as time passes and the pulpwood forests of the world are further depleted and production in the United States diminishes.

Such a partnership would be a most profitable investment as well as an insurance of supply. I will not take of your time to go into that phase of the matter, but to those who are interested I would be glad to submit facts and figures that I am sure would convince the most skeptical.

This Empire partnership should be undertaken without delay. While Canada's pulpwood resources are vast, they are not by any means inexhaustible, and



the more easily accessible areas are rapidly being acquired. One of Canada's leading foresters, Mr. Clyde Leavitt, has computed that apart from annual growth and without allowing for further development, the commercially accessible areas of pulpwood in Quebec represent only 52 years supply, those of Ontario only 67 years' supply and those of Nova Scotia only 30 years' supply. Available supply in British Columbia is probably sufficient for a longer period at the present rate of cutting, but I have not at hand definite figures for that province.

In this connection one of the first statements of the present Premier of Quebec following his election to that office a few weeks ago, is very significant, and will be endorsed by most publishers who, while realizing that the policy forecasted would add to newsprint cost temporarily, realize also that it is the only means of insuring future supply. Premier Taschereau's statement was as follows:

"The time has come, it appears to me, to regularize the cutting on timber limits by fixing a maximum of

the annual cut to prevent the destruction of the forests and a minimum to stop speculation, and to insure us a reasonable revenue from the cutting rights."

"Reforestation should be immediately undertaken and encouraged with energy."

#### A Vision of an Empire Industry.

And so in considering the present situation and future prospects and looking for a solution of both of these and of the difficulties confronting the newspapers of the United Kingdom and the Overseas Dominions in regard to pulp and newsprint supplies, I see as in a vision a series of pulp and paper industries springing up in the pulpwood forests of this country, controlled by British and Empire capital, sending their product to every part of the Empire, insuring continued supplies for the Empire Press, creating another bond of independence, and strengthening the community of interest and unity of purpose and action, among the component parts of the Empire. The opportunity is there; I commend it to your investigation, your consideration and your action.

## Pulp and Paper Course at Syracuse

The plans for a college four year course in paper and pulp making have so far been completed by the New York State College of Forestry that a letter is being sent out to prospective students giving the complete details of the four year course by semesters and by branches. Prof. C. Earl Libby, in charge of the department, has been amazed by the large number of calls for information on such a course, and anticipates that there will a large number of freshmen this year who intend entering the paper industry as college trained paper makers. The number is, in fact, so large that the college is accepting for this, as for regular forestry courses, only those who are apparently well fitted for such a course. By the time the registration period ends it is probable that the college will be so flooded with applications that it will not have capacity for all who wish to enter.

Of the new course, Professor Libby says: "In comparing the paper and pulp course with that of the General Forestry Course, it will be seen that the first year's work in both courses is identical. The work of the second year is more specialized, the student continuing his work in chemistry and physics as both these sciences are fundamental to a student who desires to graduate as a pulp and paper engineer. During the third and fourth year the student will take up work directly bearing on the production of pulp and paper although it should be noted that the course outlined for 1920-21 in the Junior and Senior years differs but slightly from the established Forestry course for the reason that there are at present no students in the College who have had the proper preliminary training to allow them to take up this specialized work.

"Students who register in the pulp and paper department in September 1920 as Freshmen or Sophomores will be able to graduate as pulp and paper engineers as the plans of the College mature. To enable them to do this the work of the Junior and Senior years will be devoted almost exclusively to chemistry, mechanical and electrical engineering, and the more technical phases of pulp and paper manufacture,

including the theory and practice of pulp manufacture by all processes, the design and operation of paper making machinery, the bleaching and coloring of stock, paper testing, etc.

"Students who are at present members of the Junior and Senior classes at this college or students in other colleges who desire to enter here with advanced standing will be required to complete all fundamental courses of the first two years, especially physics, chemistry, and mathematics, for which they have no credit, before they will be allowed to take the more advanced courses in pulp and paper chemistry and graduate from the college as pulp and paper engineers. At present, a minimum of two years' work would be required of any student whatever his standing, as the organization of the pulp and paper courses is so incomplete that he could not obtain the necessary amount of training in this field until he had completed the additional courses in pulp and paper technology, which will be given during the year 1921-22."

The curriculum for paper and pulp students, in detail, is as follows. (The numbers after the name of a course refer to the designation in the college catalogue):

#### FIRST YEAR

Identical with General Forestry Curriculum		Hours
General Forestry I		2
English I		3
Forest Botany I		4
Forest Mathematics I		3
Modern Language		3
Chemistry I		4
		19
HOURS		Hours
Forest Zoology		4
English II		3
Forest Botany II		4

Chemistry I	4
Modern Language	3

18  
—

SECOND YEAR.

	Hours
Silviculture II	3
Wood Technology I	3
Physics I (or 23 or 24)	4
Chem. Qualitative Analysis	3
Mechanical Drawing	2
	15

	Hours
Wood Technology I	3
English II	3
Physics I (or 23 or 24)	4
Chem. Qualitative Analysis	3
Mechanical Drawing	2
	—
	15
	—

THIRD YEAR.

	Hours
Wood Technology III	4
Forest Chemistry III	4
English IV	1
Pulp Manufacture	5
Forest Utilization	4
	—
	18
	—

	Hours
Forest Economics I	4
Forest Utilization II	3
Forest Chemistry III	4
Paper Manufacture	5
Paper Testing	2
	—
	18
	—

FOURTH YEAR

	Hours
Silviculture V	4
Forest Engineering VII	3
Forest Zoology II	3
Forest Economics VI	2
Forest Economics V	3
Elective	1
	—
	19

	Hours
Forest Engineering IV	3
Silviculture III	3
Silviculture VII	2
Silviculture VIII	3
Rhetoric IV	3
Elective	1
	—
	19

It should also be noted that this Curriculum is effective for the college year 1920-21 only. Additional courses in Pulp and Paper Manufacture will be offered for the year 1921-22.

**NORTHCLIFFE CONTROLS GULF PULP AND PAPER CO.**

One of the most important transactions which has occurred for some years past in this province in connection with the pulpwood industry has just been completed, in virtue of which Lord Northcliffe, proprietor of the London Times and a number of other English newspapers, has acquired a three-quarter interest in the timber and pulpwood areas and allied industries on the North Shore of the Lower St. Lawrence, hitherto controlled by the Messrs. Clarke, of Clarke City.

The Quebec Telegraph states that the entry of Lord Northcliffe into the pulpwood industry of this province is of particular interest from the fact that the great Newspaper Magnate, some years ago, acquired enormous forest and pulpwood areas in Newfoundland, where he has been operating for some time past, not only in the production of pulpwood but also in the manufacture of paper upon a tremendous scale, producing not alone for the purposes of his own publications, which naturally consume enormous quantities but also selling large amounts of the finished products in the United States to the International Paper Company and other consumers. The fact that Lord Northcliffe has now decided, apart from his enormous holdings in Newfoundland, to enter the manufacturing business in this province, may of course be taken as indicating that Quebec offers advantages in the industry which are not to be found elsewhere.

It may well be that the quality of our raw material which is much sought by manufacturers of wood pulp is found superior to that of other countries and there is no doubt that in the large extent of our "white coal" for power purposes and in the conditions of the labor market our province certainly possesses advantages not to be found elsewhere.

The plant of the Gulf Pulp and Paper Company, at Clarke City, Seven Islands, turns out 150 tons of dry pulp per day and gives employment to nearly one thousand hands.

As soon as the deal was put through, a new board of directors was elected, consisting of Frank W. Clarke, of Quebec, J. Alex Cameron, of Montreal, and Kenneth K. Mac Kenzie, of New York. Frank W. Clarke was elected vice-president and general manager of the company and will continue in active charge of the operations of the company, as heretofore.

**BACKUS BUYS KENORA POWER PLANT.**

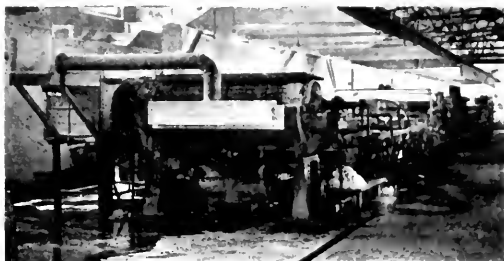
Another step has been taken, according to a despatch from Kenora, toward the establishment of a pulp paper mill by the Backus interests in Kenora, Ont. It is stated that the town, by a vote of 522 to 28, passed a by-law last Saturday, authorizing the sale of the municipal power plant to the Backus people and fixing their present assessment at \$300,000 for ten years and granting exemption from all, but school taxes for a like period on all additional lands, up to 125 acres, which they may acquire for their mills. The company agrees to sell power to the town at \$20 per H.P. year. The agreement approved by the citizens is conditional upon the company securing the English River pulp wood limits. There is considerable effort being made elsewhere in the province to have these limits put up for public tender in the regular way, though the sentiment in Kenora seems to favor direct sale to the Backus company.

## Seeing Paper Machines made in Canada

Several years ago the announcement was made by the Dominion Bridge Company Limited that they intended building paper machines. Some people doubted their ability to do so successfully. There is no doubt about it now. A machine has actually been built and is in successful operation. Four machines are now in process of construction. The editor's first visit to the extensive works at Lachine was while the Howard Smith machine was still in the designing room.

A second visit was made a few days ago and great changes were noted. The pulp and paper machinery department has been installed in the plant originally built for the construction of the Quebec bridge. According to the terms of incorporation the St. Lawrence Bridge Company died when that notable structure was finished, and as the plant could not again be used for a bridge contract, it was acquired by the recently organized Dominion Engineering Works, Limited, and put to use as stated. Many new machine tools and other equipment have been acquired and the plant has every facility, both in machinery and personnel, for turning out machines of the highest order of mechanical design, elegance and exactness. These terms are used advisedly, because if there is a paper machine anywhere, whose lines and finish surpass the new Laurentide wonders, we'll buy a ticket to that place right off.

Our editorial friend and neighbor, Mr. F. W. Gray of Iron and Steel of Canada visited the plant not long ago and wrote such a good description of it, that we



The wet end of the new machine of the Howard Smith Paper Mills at Beauharnois.

shall quote it rather fully in the following paragraphs, adding a few remarks from our own observation. This will give our readers an idea of what the place is like but anyone who has the opportunity should go to Lachine and meet Mr. Geo. E. Bell and Mr. Geo. D. Kilbury, who will be glad to show visitors what a Canadian plant can do.

"The Dominion Engineering Works has been formed to manufacture paper-making machinery and hydraulic machinery on a scale commensurate with the requirements of Canada.

The relatively important pulp-wood resources of Canada are a matter of contemporary notoriety. What is perhaps not so well known is the growth of the paper-making industry in Canada, as distinct from the exportation of pulp-wood and wood-pulp. The manufacture of the numerous and varied products of wood-pulp in the Dominion, of which paper is chief, is of rapidly growing importance, and is a natural

result of the desire of Canadians to elaborate the raw materials of the country into finished products at home in preference to exporting the basis of profitable industries and employment. The demand for paper-making machinery is for these reasons likely to be heavy and well maintained in Canada.

The Dominion Engineering Works is closely connected with the Dominion Bridge Company, a company with a management that has, as we stated in a previous issue, "combined engineering ability and foresight as to the needs of Canada with a keen appreciation for the commercial opportunities." An account of the formation and directorate of the new Company has been published, and need not be repeated.

The Dominion Engineering Works is therefore organized to supply an insistent demand that will grow with the country, and it has the further advantage of a thoroughly competent technical management and a trained staff of workers of unusual ability and experience.

The Company has taken over the erecting and machine shops of the St. Lawrence Bridge Company at Rockfield about a mile from the Dominion Bridge Works at Lachine—especially constructed in 1912 for the fabrication and assemblage of the members of the Quebec Bridge. These shops are of substantial fire-proof construction, well laid out as to lighting and the transference of heavy parts, having rail connection with both the Canadian Pacific and the Canadian National systems and situated within a short transfer distance of the Lachine Canal. The works are connected with the power ducts of the Montreal Light Heat and Power Co., and possess in addition a stand-by steam plant.

### Shops.

The main building is 660 ft. long and 220 ft. wide. There are two erecting bays with spans 85 ft. and 75 ft., each by 220 ft. long. The side bays are 60 ft. wide and 440 ft. long, and contain the boiler house, power house, tool room, blacksmiths' shop, flask making department, timekeeping offices, etc.

The crane equipment is particularly complete. It consists of two 35-ton cranes, running longitudinally, and four 10-ton cranes, with crosswise travel. The longitudinal crane-ways have a capacity of 75 tons, and a 75-ton crane has been ordered to replace one of those now in position. There are also seven 10-ton assembling hoists.

The erecting bays are equipped with six 6-ton jib cranes with longitudinal travel. One of the erecting floors will be reserved for the assemblage of paper-making machinery, and the other floor will be used for the hydraulic machinery.

### Foundry.

The foundry as at present used, is a building 145 ft. by 181 ft. but will shortly be enlarged to 145 ft. by 330 ft. The cupolas comprise one of 84 inch dia., not yet installed but shortly to replace the 37 inch cupola now in place, and one of 54 inches. There are two casting pits, but the foundry extension will be equipped with a casting pit 120 ft. long by 30 ft. wide and 8 ft. deep, intended for pouring the large castings to be used for the water turbines. The equipment of the foundry further includes a modern sand-blast room, large and small core-ovens, jolt-rammer, etc. A cind-

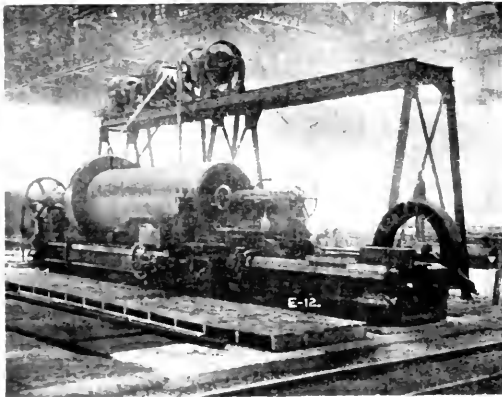
er-mill is used for reclaiming metal and coke from the cinders. The foundry is equipped with a 70-ton and a 15-ton crane.

The steam-plant consists of six Robb boilers aggregating 1,000 h.p., a 2,000 c. ft. air-compressor, 400 kw. d.c. generator direct-connected with a Bellis-Moreau engine, and a 500 kw. motor-generator set. The brick stack is 150 ft. high.

The pattern shop is a separate brick and steel building 176 ft. by 60 ft.

The machinery is not yet all in place, but it is intended to provide some very large tools so that it will be of sufficient capacity to handle the largest sized machinery parts that are expected to be used in Canada. Similarly the foundry is being equipped to make castings of the largest dimensions that can be transported in the country.

The machinery, already installed and to be provided, includes drills, slotters, boring mills, lathes, planers, key-seater, bolt-threaders, grinders and gear-cutting tools, wheel presses, etc. A Farrell grinder, 32 inch, by 240 inch, is in use for truing up the calender rolls of paper-making machinery, an operation requiring great precision.



Boring a 72 inch dryer roll.

The general equipment of the shops will be of a specialized and thoroughly adequate character.

The machine-tools are grouped around shafting supports erected from the floor, an arrangement that leaves the roof free from the movement of the cranes and hoists, and relieves the roof trusses of weight. The machine-tools are grouped according to type to facilitate the work and supervision.

There is ample floor space both for assembling and erecting, and for any additional machinery that may be provided.

At the present time the works are building two 160 inch high speed newsprint machines for the Laurentide Company. These machines are of the latest type. The dryers, which weigh 16 tons in finished condition, and are 72 inches in diameter, revolve at a circumferential speed of 1,000 ft. per minute, and require very exact bearing. Generally speaking paper making machinery is of a large size. It consists essentially of passing a stream of pulp over a series of dryers heated with steam, and through a number of rolls covered with rubber, felt or made of polished metal, as required. This latter set of rolls revolves very swiftly, and

must be fitted with exactness and very small clearances, and, while the separate parts are not of intricate design, they must be made and fitted with precision.

Paper-making machinery already made and delivered by the predecessors of the Dominion Engineering Works (The Dominion Engineering and Machinery Co.) includes one 84 inch fourdrinier writing-paper machine for the Howard Smith Co., Beauharnois, Que.

In addition to the Laurentide order there is also being built a 148 inch Harper tissue-paper machine for the Interlake Tissue Mills and a board machine for the Stratheona Paper Co.

#### Hydraulic Machinery.

The Company has obtained the exclusive Canadian rights for the manufacture of hydraulic machinery from the designs of the I.P. Morris Co. of Philadelphia whose patented designs and patterns will be available for use. The I.P. Morris Co. is the turbine-division of Wm. Cramp and Sons, Ship and Engine Building Co. of Philadelphia. Mr. H. B. Taylor, vice-President of Messrs. Cramps is a director of the Dominion Engineering Works, Limited.

At the present time the Company is building two 20,000 h.p. water-wheel units for the Laurentide Co.,



Rough dryer roll castings.

being a duplicate of the units now in operation at this Company's plant and two 10,800 H.P. units for the Cedars plant of the Montreal Light, Heat and Power Company.

The work already done by the Dominion Engineering Works, and that in immediate prospect, together with the large expansion which must necessarily follow an enterprise that opens up so specialized, and at the same time so undeveloped a field as this company has chosen for its activities, forecasts a noteworthy extension of the metal-working trades in Canada.

#### Some of the Sights.

A paper man looks at things somewhat differently from an iron and steel man, so Mr. Gray's remarks have the added advantage of giving another point of view. The editor saw a great many interesting things, so many, in fact, that only a few will be referred to.

The designing and drawing department is at the main office in Lachine and we spent considerable time there, discussing that part of the work, for which excellent quarters are provided.

The machine tool and erecting shop is bigger than

any paper machine room we can recall. The frames for the press parts of the Laurentide machines were in position so the rolls could be slipped in and tested and the great dryer frames stood like giant skeletons. All parts are fitted and bolted up in the shop, an important point, especially where a part must occasionally be made to the design of some one with a patented device. An interesting feature was the massive ball and socket joint which improves the alignment of the heaviest rolls. The frequent introduction of ball bearings was also observed.

Rolls of all kinds were seen in all stages of preparation, from building the brick core for the huge dryer castings to the final polishing of tube rolls. Mr. Kilbury explained the various methods of fastening the journals into the ends of the different rolls. This is rather a delicate operation because, as Mr. Gray has pointed out, even the most massive parts must work in perfect running balance; the slightest snap to the paper will sometimes cause it to break. We were told how many of the big 16 ton (finished) dryer rolls were cast consecutively without a failure and of the surprisingly large average of perfect castings of these difficult pieces. About a ton of extra metal is poured so as to give opportunity for impurities to rise. This makes a large rim to be cut off. The inside of the cylinder is carefully bored and the outside is turned and ground to an accurate measurement.

Preparations are being made for an exhaustive investigation as to what happens to the water inside the dryer at a variety of speeds. The results are to be published.

There was a big difference between the 6 ft. diameter dryers for the Laurentide 166" news machine

and the 48 inch dryers for a board machine, but each part is just as carefully made.

The Dominion Engineering Works has quite a variety of machines to their credit, which is a compliment to Canadian versatility; the Howard Smith Paper Mills machine is already making high grade stationery at Beauharnois, the Interlake tissue machine is a Harper Fourdrinier which will soon be turning out tissues, the Strathcona Paper Co. will make various kinds of boards on their four cylinder machine, while the twin machines under construction for the Laurentide Co. will be high speed news machines of the most modern and improved design and construction. These machines are being elegantly finished. Some people will say it is a waste of money to fill and rub down the frames of a paper machine, but such people never heard of psychology. It may cost one per cent. (that is our guess) to put the best possible finish on the machine, but if that finish, and the knowledge that the company feels that way about its machine, will inspire the crew to take pride in it and care for it, we say it is not wasted. The men's opinion will be no higher than the company's.

There is much more to be told but this is enough for the present, except that, although all departments are busy at the present time, the acquisition of new machinery and the growing experience of the force will make it possible for customers to get excellent service and prompt deliveries.

The editor, as occasion offers, plans to visit other plants and acquaint the readers of the Pulp and Paper Magazine with facilities in Canadian shops for making pulp and paper mill equipment.

## Recommended Specifications for Paper Makers Quicklime and Hydrated Lime

This is the first of a series of specifications for the lime used in various chemical industries. To assist in the development of these specifications, the Bureau of Standards has called together an Interdepartmental Conference on Chemical Lime, composed of representatives of the Geological Survey and Bureau of Mines of the Interior Department; the Bureau of Soils, Bureau of Chemistry, and Forest Service of the Department of Agriculture; and the Nitrates Division of the War Department. The present specification, based on a draft originally prepared by E. A. Curtis, chief of the paper section, Bureau of Standards, has been unanimously approved by the above conference, and has also received the formal approval of the National Lime Association and the Technical Association of the Pulp and Paper Industry.

### 1.—GENERAL.

(a) *Use of Lime in Cooking Rags.*—Rags are cooked in a digester under steam pressure, with lime, soda ash, or caustic soda, or a mixture of soda ash and lime. They are then washed to eliminate as much noncellulose material as possible.

Either quicklime or hydrated lime may be used for cooking rags. The decision as to which to use is generally based on availability, cost, and present practice.

(b) *Definition of Quicklime and Hydrated Lime.*—Quicklime is the product resulting from the calcination of limestone. It will slake when water is added to it, and this slaking is accompanied by an evolution of heat and an increase in volume. It consists essentially of calcium oxide. Hydrated lime is a dry powder which is made by treating quicklime with enough water to satisfy its chemical affinity. It consists essentially of calcium hydroxide.

### 2.—REQUIREMENTS.

(a) *Quality.*—It is obvious that a clean lime, free from dirt and gritty substances, is desired.

(b) *Composition.*—Quicklime and hydrated lime, to meet the requirements of these specifications, shall not exceed the maximum percentages or fall below the minimum percentages given in the following table:

Ingredients.	Quicklime.		Hydrated Lime.	
	Max. P.e.	Min. P.e.	Max. P.e.	Min. P.e.
Calcium oxide . . . . .	95	..	72	..
Magnesium oxide . . . . .	2	..	1.6	..
Oxides of silicon, iron and aluminum, and other insoluble matter . . . . .	2	..	1.6	..
Carbon dioxide . . . . .	2	..	1.6	..

(c) *Packing.*—Quicklime is shipped either in bulk in earload lots or barrels holding 180 pounds net or 280 pounds net each. Hydrated lime is shipped in paper bags holding 50 pounds net each.

(d) *Marking.*—Each package, or each earload of

\*Circular of the Bureau of Standards No. 96 issued June 15, 1920, by Department of Commerce, Bureau of Standards, S. W. Stratton, Director.

bulk material, shall be legibly marked with the names of the consignor and consignee, and with some means of identifying the particular contract on which the shipment is made.

This information is in addition to that required by the Federal lime-barrel law.

### 3.—SAMPLING AND TESTING

(a) *Sampling*.—The purchaser will bear all expense of sampling and testing. When quicklime is shipped in bulk, the sample shall be so taken that it will represent an average of all parts of the shipment from top to bottom, and shall not contain a disproportionate share of the top and bottom layers, which are most subject to changes. The sample shall comprise at least 10 shovelfuls taken from different parts of the shipment. The total sample taken shall weigh at least 100 pounds, and shall be crushed to pass a 1-inch ring, mixed thoroughly, and "quartered" to provide a 15-pound sample for the laboratory.

When quicklime is shipped in barrels, at least 3 per cent of the number of barrels shall be sampled. They shall be taken from various parts of the shipment, dumped, mixed, and sampled as specified in the above paragraph.

In the case of hydrated lime, the sample shall be a fair average of the shipment. Three per cent of the packages shall be sampled. The sample shall be taken from the surface to the centre of the package. The material so obtained shall be thoroughly mixed and quartered to provide a 2-pound sample for the laboratory.

When sampling quicklime or hydrated lime, it is essential that the operation be conducted as expeditiously as possible, in order to avoid undue exposure of the material to the air. The sample to be sent to the laboratory shall immediately be placed in an air-tight container in which the unused portion shall be stored until the shipment has been finally accepted or rejected by the purchaser.

The sample may be taken either at the point of shipment or at the point of destination, as agreed upon by the contracting parties. The maximum limit for carbon dioxide as given in these specifications holds only when the sample is taken at point of shipment. If it is desired to take the sample at point of destination, due allowance must be made in order that the lime manufacturer shall not be penalized for the carbon dioxide absorbed in transit.

b. *Testing*. The following directions are a brief summary of the analytical methods which are recommended. For more complete information on this subject reference should be made to *The Analysis of Silicate and Carbonate Rocks*, by W. F. Hillebrand, United States Geological Survey, Bulletin No. 700.

Place 0.5 g. of the sample for 15 minutes in a platinum crucible. Cool, and transfer to an evaporating dish. Mix to a slurry with distilled water. Add 5 to 10 cc. concentrated HCl. Heat gently until solution is complete, breaking up lumps if necessary. Evaporate to dryness on water bath. Add 5 to 10 cc. concentrated HCl, and dilute with an equal volume of distilled water. Digest on water bath for 10 minutes. Filter, and wash with hot water. Evaporate the filtrate to dryness. Dissolve in acid and water as before. Filter, and wash with hot water. Ignite the two precipitates together, and weigh as silica and insoluble matter.

Dilute the above filtrate to 250 cc. Add HCl if

necessary to insure a total volume of 10 to 15 cc. Make alkaline with  $\text{NH}_4\text{OH}$ . Boil until odor of  $\text{NH}_3$  is barely noticeable. Filter, and wash slightly with hot water. Dissolve the precipitate with hot dilute HCl, and repeat the precipitation as before. Filter, and wash thoroughly with hot water. Ignite, and weigh as oxides of iron and aluminum.

To the filtrates from the above add a few drops of  $\text{NH}_4\text{OH}$  and bring to a boil. Add 25 cc. of a saturated solution of  $(\text{NH}_4)_2\text{C}_2\text{O}_4$ . Continue boiling until the precipitate becomes granular. Let stand until precipitate settles clear. Filter, and wash with boiling water. Ignite the precipitate, dissolve in dilute HCl, and dilute to 100 cc. Add excess of  $\text{NH}_4\text{OH}$ , and boil. Filter out any insoluble matter, ignite and weigh, and add its weight to the oxides of iron and alumina found previously. To this filtrate, add  $(\text{NH}_4)_2\text{C}_2\text{O}_4$ , proceeding as before. Filter, and wash with boiling water. Ignite and blast to constant weight as calcium oxide.

Acidify the filtrates from the above with HCl. Evaporate to 150 cc. Add 10 cc. of a saturated solution of  $\text{NaNH}_4\text{HPO}_4$ , and boil. Cool. Add  $\text{NH}_4\text{OH}$  drop by drop, with constant stirring, until the precipitate starts to form. Then add moderate excess of  $\text{NH}_4\text{OH}$ . Stir for several minutes. Let stand overnight. Filter, and dissolve the precipitate excess of dilute HCl. Dilute to 100 cc., add 1 cc. of saturated solution of  $\text{NaNH}_4\text{HPO}_4$ , and precipitate as before. Filter, and wash with an alkaline solution made by diluting  $\text{NH}_4\text{OH}$  until it contains about 2½ per cent  $\text{NH}_3$ , and then adding a few drops of  $\text{HNO}_3$ . Ignite, and weigh as  $\text{Mg}_2\text{P}_2\text{O}_7$ . Multiply this weight by 40/111 to find the weight of MgO.

Place 5 g. of the sample in a small Erlenmeyer flask and cover with hot distilled water. Connect this flask into a carbon-dioxide train, set up as follows: Next to the flask is a reflux condenser, to which is connected a calcium-chloride drying tube, followed by a tube containing anhydrous  $\text{CuSO}_4$ , then another tube of  $\text{CaCl}_2$ , then by two tubes filled with soda lime, and finally by another tube of  $\text{CaCl}_2$ . The entire train must be so arranged that a stream of  $\text{CO}_2$  free air can be kept passing through it. Start this stream of air. Weigh the tubes containing soda lime and replace them in the train. Add to the sample in the flask about 25 cc. of 1:1 HCl, being careful that no gas is lost and that the effervescence is not too violent during the operation. When the effervescence diminishes, heat the flask, bringing the liquid gradually to boiling. Boil for 1 minute. Remove the flame and allow the flask to cool while the stream of air is still flowing for 30 minutes. Disconnect and weigh the soda-lime tubes. Their increase in weight is recorded as carbon dioxide.

(c) *Retesting*. Notice of the rejection of a shipment based on these specifications must be in the hands of the consignor within 10 days after the receipt of the shipment at the point of destination. If the consignor desires a retest, he shall notify the consignee within 5 days of receipt of the notice of rejection. The original testing laboratory shall keep the sample sealed air-tight from the time they have taken out enough material for the original test until the expiration of the 15 days noted. The original testing laboratory shall agree to transmit the sample to any other laboratory for a retest at the direction of both of the contracting parties. This retest shall be at the expense of the consignor.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A-1. Reaction products of alkali-sawdust fusion; acetic, formic, and oxalic acids and methyl alcohol.** S. A. Mahood and D. E. Cable, Forest Products Laboratory Madison, Wis. *J. Ind. and Eng. Chem.*, **11**, 651-5, (1919). 17-20 per cent. of acetic acid can be obtained from hardwood sawdust by fusion with NaOH. A simultaneous production of oxalic acid amounting to approximately 50 per cent. of the dry weight of the wood is obtained. If the reaction is carried out in a closed vessel, a simultaneous production of methyl alcohol results amounting to 2.4 per cent.; but as the temperature is increased beyond 200°C. the yield of oxalic acid is considerably reduced. At lower temperatures both formic and acetic acids are produced amounting to approximately 15 per cent. each. It appears that the yields of oxalic acid obtained from pine with NaOH will more nearly approach those obtained with KOH if the temperature is kept at approximately 200°C. the heating prolonged, and the ratio of alkali to sawdust maintained at 3 to 1. It has been found possible to recover as much as 91 per cent. of the alkali used.—A.P.C.

**A-1. Modification of the phenylhydrazine method for determining pentosans.** Paul Menaul and C. T. Dowell, Oklahoma Expt. Sta. *J. Ind. and Eng. Chem.*, **11**, 1024-5, (1919). The distillation is carried out with H<sub>2</sub>SO<sub>4</sub> instead of HCl. No NaCl is added to the distillate, and Na<sub>2</sub>SO<sub>4</sub> may be added or not. After the addition of the phenylhydrazine to an aliquot part of the distillate, the solution is stirred for the required time by bubbling CO<sub>2</sub> into it. An aliquot (50cc) of the filtrate from the hydrazone is put, by means of a dropping funnel, into a 250cc Fresenius nitrogen bulb, which has been previously filled with a 10 per cent. solution of ammoniacal copper sulphate and heated to expel the air. A 100cc burette is connected to the tube of the Fresenius bulb and a glass tube provided with a stopcock connects the neck of the bulb with a Schiff's nitrometer containing H<sub>2</sub>SO<sub>4</sub>. The aliquot of the filtrate is brought into the bulb by closing the cock leading to the nitrometer and lowering the burette. The bulb is heated so as to keep the reaction mixture near the boiling point until the reaction is complete. The method gave the same results as the phloroglucinol method on 3 samples of grain sorghum cut at different stages of growth.—A.P.C.

**A-1. The proximate analysis of wood.** W. H. Dore, *J. Ind. and Eng. Chem.*, **11**, 556-63, (1919). Methods for the summative analysis of woods are described and analyses of 5 California woods by these methods are given. Sawdust is found to be the most satisfactory mechanical condition of wood for analytical purposes. Cellulose in wood is determined by a modification of Cross and Bevan's method involving chlorination in vacuo. The cellulose residues are tested for the presence of lignin and corrections applied when necessary. Lignin is determined by Koenig's method with 72 per cent. H<sub>2</sub>SO<sub>4</sub>. The probable relation of lignin so obtained to true lignin is discussed. In the analysis of coniferous woods by these methods 96-

7 per cent. of the wood constituents are accounted for. In the case of the hardwoods examined, the lignin determinations fail and only 83-91 per cent. of the wood constituents are obtained. Cutin is not a constituent of importance in wood tissue.—A.P.C.

**A-3. New process for obtaining paper pulp (from gorse).** Fr. patent No. 495,367. J. C. Dauzene, A. F. P. Robert, and C. Fabre, Toulouse, France. *Papeterie*, **41**, 496, (Nov. 10, 1919).—A.P.C.

**A-3. Blady grass, new source of pulp.** *Paper*, **25**, 596, (1919). A mill has recently been established in the Cairns district, Queensland, which manufactures about 10 t. of pulp a week from blady grass (*Imperata-rundinacea*), for the manufacture of coarse papers. The raw material is abundant and the demand large, so that the prospects are encouraging.—A.P.C.

**A-3. Notes on some new fibres.** Albert Janvier, Directeur Technique des Papeteries de l'Indo-Chine. *Papeterie*, **41**, 482-6, Nov. 10, 1919. Notes on the various kinds of bamboo, and on the methods actually used for obtaining pulp from them.—A.P.C.

**A-12. Proximate analysis of commercial casein.** F. L. Browne, Forest Products Lab., Madison, Wis. *J. Ind. and Eng. Chem.*, **11**, 1019-21, (1919). A system for the proximate analysis of casein, consisting of determinations of color, odor, moisture, fat, ash, N, and acidity, is described. The results of the analysis of some 200 samples of casein of different types and methods of manufacture are reported and discussed.—A.P.C.

**A-12. An improvement in casein making.** J. L. Samms. *J. Ind. and Eng. Chem.*, **11**, 764-7, (1919). A study of the optimum conditions for obtaining a casein having low ash and acidity. The method recommended is as follows:—Heat skim milk to about 95°F., stir vigorously while adding dil. acid slowly until a clear whey is obtained, avoiding excess of acid. The curd obtained at this temperature is just coarse and coherent enough to settle rapidly and permit draining the whey, but sufficiently loose and open to permit ready washing with water.—A.P.C.

**A-14. A paper tearing resistance tester.** H. N. Case, *J. Ind. and Eng. Chem.*, **11**, 49-51, (1919). A very simple apparatus is described for measuring the resistance of paper to tearing. Its advantages are:—

1. The comparative length of the fibre and its peeling qualities are shown in the result. 2. Sizing does not increase the tearing resistance to such an extent as it does the other tests. 3. The apparatus is simple and depends on no springs and gauges. It is applicable to both light and heavy papers. 4. The amount of grain in the paper is shown. 5. The load is applied with an unchanging rate of increase. Its disadvantages are:—(1) The testing is tedious. (2) There is an apparent disadvantage due to the sensitiveness of the test in that the individual tests on the same sample vary so greatly that even the average of these tests appears unreliable until it is observed that the tearing resistance numbers of different grades of paper show much greater distinction between the grades than the corresponding Mullen, Ashcroft, or Schopper tests.—A.P.C.

## British Trade News

From our London Correspondent)

July 31, 1920.

The International Number of the "Pulp and Paper Magazine" has just reached London. It is a great triumph in the progress of journalism and pulp and papermen have read it with extreme pleasure. I think one paper man summed up the whole view of the International Number when he said: "From the greatest pulp manufacturer down to an eight-year old child in a home can sit down and read it and enjoy it." There is no doubt this International Number can show what Canadian enterprise means—editorially, typographically, and in the difficult task of illustration production, not to speak of the 3-color work.

### Edward Lloyd, Ltd.

At the 30th ordinary general meeting of Edward Lloyd, Ltd., Mr. Frank Lloyd was again welcomed as chairman and governing director. In a concise speech he said the profits for the year past showed an increase of £45,091 18s. 7d., as compared with 1918, after making provision for taxes and expenses, and the directors recommended a dividend of 13 $\frac{3}{4}$  per cent. on the ordinary shares, carrying forward £130,976 16s., as against £52,690 4s. 11d. brought in. That would bring the average distribution since the outbreak of war up to 9  $\frac{1}{3}$  per cent. on the nominal capital of £600,000. If, however, the real capital employed in the business be taken into account, the average return over the last six years only worked out at about 7 $\frac{1}{2}$  per cent. Larger dividends could have been paid, but it had been the policy of the company to strengthen the business and provide the necessary funds for further expansion by the setting aside of ample reserves and by a very conservative policy in the distribution of dividends.

### Pulp and Paper Expansion.

As regards the working of the past year, Mr. Frank Lloyd mentioned that the production of pulp in Norway and paper at Sittingbourne both showed a remarkable expansion. Owing to the adoption of the 3-shift system in August last year, a sensible slowing down in the growth of production was experienced, with a gradual improvement during the remaining months of the year. The current year would show a still greater improvement, the pre-war standard of production having now been passed with the prospect of further improvement in the future. The change over to the 3-shift system was a serious handicap to production for the time being, but thanks to the determination of the men, all difficulties had been overcome, a result he ventured to predict at the last annual meeting. In conclusion, Mr. Lloyd paid a high compliment to their staff and the retiring directors, Mr. Harry Lloyd and Mr. E. Raynham were re-elected.

### Swedish Pulp Transport.

Everything points to the fact that there is something good in store for the transport of pulp from Sweden to England. There is a war-time relic known as the North Sea steam ferry and Mr. Montagu Villiers, who has recently been on a visit to London, has been discussing the proposal to use the ferry between Sweden and England. Swedish representatives are shortly coming to England to discuss the project with British traders and manufacturers, and there is a growing belief that a North Sea steam ferry would so quicken the transport of goods as to revolutionise the

whole trade between the British and Scandinavians. Naturally the Scandinavian pulp and paper men are keen on the proposal and Sweden has already given support to the scheme. It means a big thing for pulp and paper consumers in England. The present sea route is slow and at times uncertain. There is also heavy freightage and Scandinavians are out for the cheapest sea route.

### Imperial Paper Mills.

Subscriptions have been invited, at 98 per cent, for an issue of £800,000 7 $\frac{1}{2}$  per cent. guaranteed 15 year mortgage debenture stock by the Imperial Paper Mills Ltd., Gravesend. The capital was very soon realised and the demands for shares very great. The company was formed in 1909 by the Amalgamated Press, London, for the purpose of erecting and equipping an up-to-date paper mills capable of supplying the needs of the Amalgamated Press and other large consumers of paper. The Press alone had, or has, something like 70 odd magazines and periodicals. The company also supplies paper to "The Times" (London) "Daily Mail", "Mirror", "Sunday Pictorial", and other prominent papers. The directors are Sir Geo. Sutton, Bart. (chairman of the Amalgamated Press Ltd.) Mr. A. E. Linford, Mr. Stanley Cousins, Mr. C. L. Stevens, (of A. E. Reed & Co.), and Mr. E. A. Swisham (of the Anglo-Newfoundland Development Co.) The mills at Gravesend are of the most modern type and the paper-making machines range from 94 inch. to 166 inch. wide on the wire. The oldest machine was erected 9 years ago and the newest machine was put down quite recently. The Imperial Paper Mills are on the river Thames, with a frontage of 1,200 feet, and they have their own wharves and piers. There are also railway sidings which facilitate the mill paper being easily rushed into London. The great point in the mills favor is the close proximity to London. It is simply a case of make the paper and in less than an hour it is in the hands of the consumer. Operations are now in progress to bring the capacity from 1,500 tons a week to 1,800 tons a week.

### Paper Clothes.

Most of us by this time have seen some of the paper clothes used by the German Army for diverse purposes. The lean years have not come to an end with the end of the war, and the "Ersatz" materials are more needed than ever. But the latest development must be confessed surprising. Germany is putting on sale in London, if anyone can be found to buy, suits of men's clothes "of the very best class of paper texture" and the prices range from  $\frac{1}{2}$  dollar to 5 dollars. They appear to be a sort of flexible strong kraft. One can fancy a Canadian paper mill in another 50 years time announcing that it produces paper texture of the very best class, and paper fabrics, suitable for "ready-for-service" garments. Realise how the fair-sex will cast a lynx eye on the salesman of the mill.

### The Pulp Market.

The market for chemical and ground-wood pulps is dull. There is a holiday-feeling existing. Mills, however, have fair stocks. Quotations are about as follows:—

Bleached Sulphite . . . . .	£85	£90
Easy Bleaching . . . . .	57 $\frac{1}{2}$	62
Newsprint Sulphite . . . . .	53 $\frac{1}{2}$	55
Unbleached Soda (No. 1) . . . . .	50	52 $\frac{1}{2}$
Soda Kraft (No. 1) . . . . .	40	42
Ground-wood (moist) . . . . .	17 $\frac{1}{2}$	18
Ground-wood (dry) . . . . .	34	34 $\frac{1}{2}$



# PULP AND PAPER NEWS

Mr. A. L. Dawe, Secretary of the Canadian Pulp and Paper Association, Montreal, was in Toronto this week.

Press Day at the Canadian National Exhibition will be on Friday, September 3rd and September 9th will be given over to the Imperial Press delegates.

Mr. Ben Logie, who for many years has been connected with the E. B. Edly Co., has been appointed manager of the company's Toronto branch.

Mr. Arthur Jewitt, of the office staff of the Provincial Paper Mills, Limited, in Toronto, has returned from an enjoyable holiday trip to the French River.

Mr. M. W. M. McElheran, a former well-known Western Ontario printer, now with the Stovel people in Winnipeg, was a caller on the trade in Toronto this week.

Mr. E. G. R. Clarke has removed from Toronto to Peterborough, where he will in future reside, and where he has been appointed salesman for the Canadian Nashua Paper Co., Ltd., of that city.

One hundred and twenty-six cords of pulpwood are being cut and loaded every twenty-four hours at the Hydro plant on the old Rathbun property in North Hastings. Night and day shifts are being employed.

No. 1 paper machine of the Provincial Paper Company's mill at Georgetown is closed down this week owing to the blowing out of a cylinder head. The machine will be interrupted in its operation for possibly ten days.

Mr. U. M. Waite, President and General Manager of the Kamistiquia Pulp and Paper Company of Port Arthur, inspected the work at the new mill this week and expressed himself as being well pleased with the progress that has been made. His intention is to push the work at as high a speed as possible in order that operations may be started within a few months.

The current issue of the Ontario Gazette contains the notice of incorporation of the Kamistiquia Lumber Co., Ltd., with head office at Fort William. The company is empowered to engage in the lumber and pulp business and is capitalized at \$200,000. The provisional directors are D. E. McKay, E. B. Sutherland, N. M. Paterson, H. P. Burnyeat and H. W. Robinson.

Canadian Opinion Publishing Company, Limited, with head office at Toronto, is a recent incorporation under the Ontario Companies Act. The company is authorized to engage in a general publishing business and is capitalized at \$40,000. The provisional directors are Charles Cox, C. H. Morris and C. H. Hawthorn.

The Toronto Carton Club held its regular luncheon at the Country Club at Guelph on Tuesday last, and it proved to be the most largely attended of any of the out-of-town luncheons yet held. Twenty-eight members of the club sat down at the table, representatives being present from Toronto, Hamilton, Galt, Brantford, Kitchener and Guelph. The gathering proved a thoroughly enjoyable one.

With fine pitching by Johnson and good support and hard hitting from the team, Laurentide won the first game of the new series with Three Rivers. A series of five games between the two clubs is being played to decide the championship of the St. Maurice Valley, the St. Maurice team from Cap Madeleine is out of the old league.

Mr. Fred Abraham, of Montreal, died last Friday. He was for many years secretary-treasurer of the Herald Co., and lately was president of the Atlas Bond and Security Corporation, which is interested in the development of the pulp and paper industry. He was also active in civic affairs, philanthropic work, protection of birds and other good movements.

In connection with the visit of the delegates to the Imperial Press Conference, an interesting feature in Toronto was an address given before the Empire Club at the King Edward Hotel by Mr. Robert Donald, of London, Eng., Chairman of the Empire Press Union on "After-war Peace Complications from the Viewpoint of Empire."

The visiting members of the Imperial Press Conference spent the first three days of this week in Toronto, where they were the guests of the City Council and various civic and social organizations by whom they were lavishly entertained. On Tuesday they were entertained at Hart House, at luncheon by the Governors of the University of Toronto, after which a special convocation was held at which the following received honorary degrees at the hands of Sir Robert Falconer: Mr. Robert Donald, Mr. Geoffrey E. Fairfax, Chairman of the Australian Section of the Empire Press Union and part proprietor of the Sydney Morning Herald; Sir Robert Bruce, editor of the Glasgow Herald and Right Hon. Sir Gilbert Parker, Bart. Other features of the visit were luncheons by the civic body, the Harbor Commissioners and the Royal Canadian Yacht Club. The delegates are now touring southern and western Ontario.

The Strathcona Paper Company, manufacturers of building papers and light boards, Strathcona, Ont., report that they are busy in the sheathing line and that they cannot keep up with their orders. The company have just installed another machine, which was started up this week. It is a one-cylinder machine with a 72-inch trim, and has 21 driers 42 inches in diameter. The company also has on order with the Dominion Engineering Co. of Montreal a four-cylinder board machine of 84-inch trim. The present wet Fourdrinier is being discarded and they are adding the equipment of their board machine to their present machine, so that they will have a complete board machine consisting of four cylinder over-head felt, three baby presses, three common presses, 36 driers 84 x 48 inches and other necessary equipment. It is not expected that the new plant will be in operation before next spring. The company have also added new motors in the beater room and two new boilers have been installed.

The Royal Securities Corporation has issued a map in colors, showing the location of the limits of the Riordan Company and their water powers and pulp and saw mills. From the map it appears that this company controls 10,590 square miles of timber, or about a third of the area of the Ottawa River basin.

The latest color card of the Sandoz Chemical Works, Basle, Switzerland, for dye stuffs for paper manufacture has been received by McArthur, Irwin, Ltd., Montreal. Copies will be sent to any who may be interested.

Lieut.-Col. Thomas Gibson, Vice-President of the Spanish River Pulp and Paper Mills Co., Ltd., the Secretary Mr. J. J. Gibson and Mr. H. T. H. Watson, President of the Canadian Machinery Corporation of Galt, one of the directors of the company, are with the directors and officials this week on a regular tour of inspection of the Spanish River mills at Sault Ste. Marie, Espanola and Sturgeon Falls.

The first Board of Directors of the Kaministiquia Pulp and Paper Company, recently organized, consists of the following: U. M. Waite, President and Managing Director, A. E. Osler, John Ball, C. D. Howe, E. R. Graham, Hon. T. W. McGarry, K.C., and J. A. Regan, Secretary-Treasurer. The mills of the company are to be at Port Arthur, and the first unit is expected to be in operation in about four months.

Mr. A. P. Costigane, Secretary of the Canadian Pulp and Paper Makers' Safety Association, has returned to Toronto after visiting the mills in Northern Ontario and other parts of the province. The visit was made with a view to stimulating and further developing the safety organizations already in existence among the pulp and paper mills of Ontario. Meetings and conferences with the safety committees and other organizations were held and the situation as to accident and near-accident prevention thoroughly discussed. Mr. Costigane states that the general situation improves daily, and that the existing machinery for protecting the employees is becoming increasingly efficient.

The Ninth Annual Congress of the National Safety Council will be held in Milwaukee, September 27 to October 1 inclusive, at which the Canadian Pulp and Paper Makers' Safety Association will be represented by the Secretary, Mr. A. P. Costigane. From advices received by the Canadian secretary, the gathering promises to be the best attended and most enthusiastic yet held. All Canadian pulp and paper mills interested in accident prevention are being urged to send representatives in order to help along the good work. Many interesting papers and discussions will feature the gathering.

### KAPUSKASING MILL ASSURED.

The Spruce Falls Company, a new Canadian concern, backed by large American interests, have completed arrangements with the Drury Government for taking over 24,727 acres of pulpwood limits in O'Brien Township, a 1,710 square mile limit granted to Mundy and Stewart in 1918, 400 acres of the Kapuskasing colony farm, and the farm buildings and water-power rights on the Kapuskasing River.

It is expected that a very large industry will shortly develop in the Kapuskasing settlement.

"We expect within a month or so to lay out a Government townsite," said Premier Drury. "We are not going to let them do what was done at Iroquois

Falls, where the company laid out the townsite and controlled the town."

An important clause in the agreement binds the company to reserve for the use of Canadian publishers up to 15 per cent. of its total output of newsprint, to be sold at the current market rates. "I might say that this clause will be inserted in all future agreements where pulpwood limits are sold," stated Premier Drury. A reservation of 10 per cent. of all water power developed by the company is also made for the use of the town which may spring up on the Government townsite.

The right of the Government to raise the pulp dues on the old Mundy and Stewart limits has been recognized by the new company.

Under the original grant the flat rate was 75 cents a cord. The new company will pay \$1.15 for spruce, and for other pulpwood 95 cents a cord. Saw-log timber used for lumber will be paid for at timber rates.

In O'Brien Township \$1.60 a cord for spruce and \$1.30 a cord for other pulpwood are to be paid. The company must destroy the brush to the satisfaction of the Department of Lands and Forests.

For 400 acres of the Government settlement farm south of the Transcontinental track and east of the river, upon which the company will erect its plant, the price agreed upon was \$100 an acre. The company is to take over all buildings on this area at a valuation set by the Government. If this valuation is not satisfactory a board of arbitration is to be agreed upon. This excludes the settlement schoolhouse, which is to be moved at the expense of the company to a point designated by the Government.

Six hundred men are ready to commence operations in the work of erecting the power house and mill buildings. The company undertakes to erect a saw mill with a capacity of 70,000 square feet daily, running in two shifts, by January next; a pulp mill with a capacity of 50 tons a day by January, 1922, and a paper mill with a capacity of 75 tons of newsprint daily by January 1, 1928. When in full operation, the plant will employ about 2,500 hands.

Mr. F. J. Sensesbrenner, the president of the new company, is vice-president of the Kimberley, Clark Co., of Neenah, Wisconsin, a company owning several other paper and pulp mills in the United States. With him are associates S. A. Mundy, of Bradford, Penn., and E. Stewart, of Toronto, (the two original lessees).

George F. Hardy of New York is the engineer in charge and the contract for construction has been let to Fraser, Brace Co., of Montreal.

### THE PRICE OF NEWSPAPERS.

Sixty-one of the 111 daily newspapers in Canada now have a copy rate of 3 cents.

The New York Evening World and the Cleveland Plaindealer have increased their price to 3 cents a copy.

All the evening newspapers of New York in the English language now charge 3 cents a copy.

The per copy rate of the Toronto Weekly Star is 10 cents instead of 5 cents as heretofore.

Timber from insects or fire killed trees is just as good for any structural purpose as that from live trees of similar quality, providing the wood has not been subsequently injured by decay or insects. Market dead trees before they suffer injury.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, August 14.—While a number of Canadian industries are beginning to feel the effect of quieter times and while automobile-buying is slackening and manufacturers of various lines of goods are laying off hands by the hundreds, the prosperity of the pulp and paper trade continues with no sign of abatement. Several of Toronto's big factories and others throughout the province have been decreasing their production of late by reducing their working staffs by hundreds, but whether this action is the result of business necessity or a settled policy on the part of manufacturers to bring down the present high cost of production and increase output later on when it is hoped labor may be had more cheaply, is a point that is being freely discussed. The pulp and paper trade, however, is not similarly affected and efforts are being directed towards getting all the help possible. Business demands it and promises to demand it for many months to come. Aside from a slightly quiet period in the printing trade and a consequent lessening of enquiries for stock among the jobbers there has been no slackening in the paper trade. The mills are just as busy as ever and a visit to the paper warehouses in Toronto reveals low stocks and quick turn-over of goods as they arrive from the mills.

### Jobbers in a Quandry.

Jobbers and manufacturing stationers, while manifesting great faith in the continued prosperity of the trade, are being called upon to do some close figuring as to buying policy and admit that there is some uncertainty as to the wisdom of buying heavily at the present time. For instance one big manufacturing stationer who used to pay about 8 cents a yard for binder's cloth for the book bindery and is now paying 45 cents a yard, some few months ago placed an order in England aggregating \$7,000. This order carried with it the privilege of cancellation just about now, and the manufacturer this week was called upon to decide whether or not to cancel it and run chances of getting easier prices later on, or to take it while he had the opportunity and ensure his supply. His decision was to take the goods at the price, rather than be caught short, as has been the case in some similar instances in the past.

### Freer Shipments.

Shipments of various lines of paper from the mills are reported as slightly freer, although jobbers report that in no one line can adequate supplies be secured. One Toronto house received a car load of box board this week, but it didn't come direct from the mill. The jobbers and manufacturing stationers are continually on the look-out for supplies and in the particular instance under notice the car load of box paper was bought from a man who was not going to use it right away and was willing to let it go at a price considerably in advance of the one which he paid for the goods and which netted him a nice profit on the transaction. The house had to have the goods at once and as they could not be had from the mill, the deal was made in

the open market with results satisfactory to both parties.

### Now is the Buying Time.

In a few quarters among the jobbers there has been a disposition to ease off a bit in their buying but the consensus of opinion in the trade is that the market and the outlook for the future does not justify timidity in stocking. This view is based on the argument that so long as the present shortage of paper exists—and there is no indication of a diminution in the demand—there can be no reduction in the price lists, particularly in view of the high costs of raw material and paper ingredients generally. It is pointed out that the advance in the United States freight rates is likely to add still further to the cost of laying down paper to the buyer and it is freely predicted that prices will go higher still before the downward trend sets in.

### August Prices Unchanged.

Paper dealers have been advised that there is little likelihood that the prices set at the beginning of this month will be interfered with before September 1st at least, although practically everything is being sold at prices prevailing at date of shipment. Book papers continue to be exceedingly scarce and no house is able to get adequate supplies and in this and other lines of paper, the goods that are wanted this fall will have to be ordered now.

### Box Board Increases.

Ten per cent increases on July and August prices goes into effect September 1st on all lines of board, the new prices being as follows: Manila lined chip board \$150; manila lined news, double, \$183; No. 3 pulp chip, straw and straw chip \$133; No. 3 pulp board, lined two sides, \$150; News board \$146; grey folding \$192; pulp folding \$172; filled wood board \$151; white vat lined chip board, \$146.

### General Market Notes.

Flat news is selling in the open market at 17 cents but some has been sold for a few cents lower. Roll news is quoted in spot lots at 14 cents and both are very hard to get.

The cheaper grades of bond papers are a scarce article on the market and for the most part stocks of both bonds and ledgers in the hands of the jobbers are very low.

Shipments of import stuff have not improved any during the week and wholesalers in Toronto could use considerably more high grade cover stock, bristols and printer's blanks than they are able to get across the line.

Conditions in the wrapping paper and paper bag trade remain unchanged. Jobbers report an increasing demand for their goods and continued difficulty in securing stock.

No. 1 coated book, under the recent two cents a pound increase, is selling at 19 cents and No. 2 at 18 cents a pound, f.o.b. mill and makers are experiencing great difficulty in getting enough paper to run through the coating machines. All grades of tinted stock is up in proportion.

**Roofing Stock.**

Roofing rag stock is quoted at \$50 per ton for No. 2 and \$46 a ton for No. 3 and 4. No. 1 stock is practically off the market. Roofing paper is quoted at \$45 to \$48 per ton f.o.b. Toronto.

**Rag and Paper Stocks.**

The market for mixed papers, newspapers and print manilas is strong, with a good demand from consuming mills. Books and magazines are slightly weaker as the mills have a good stock on hand. White shavings, both hard and soft, are in demand and there are numerous orders that cannot be filled. White blanks continue to advance in price under an urgent demand from mills. Cotton rags are slightly easier although there have been no further reductions in prices.

**Rag and Paper Stock Prices.**

Per Cwt, F.O.B. Toronto

No. 1 shirt cuttings . . . . .	\$19.00—\$20.00
No. 1 unbleached cotton cuttings . . . . .	\$10.00—\$16.50
No. 1 fancy shirt cuttings . . . . .	\$13.00—\$13.50
No. 1 blue overall cuttings . . . . .	\$13.00—\$13.50
Bleached shoe clip . . . . .	\$15.00—\$15.00
White cotton hosiery cuttings . . . . .	\$16.50—\$17.50
Light colored hosiery cuttings . . . . .	\$13.50—\$14.00
New light flannellette cuttings . . . . .	\$12.50—\$13.00
No. 2 white shirt cuttings . . . . .	\$12.50—\$13.00
City thirds and blues (repacked), No. 15	\$3.50—\$4.00
Flocks and satinettes . . . . .	\$2.00—\$2.50
Tailor rags . . . . .	\$2.00—\$2.25
Gunny bagging . . . . .	\$2.25—\$2.50
Manila rope . . . . .	\$7.00—\$8.00
No. 1 white envelope cuttings . . . . .	\$7.50—\$7.75
No. 1 soft white shavings . . . . .	\$6.50—\$6.75
White blanks . . . . .	\$5.25—\$5.50
Heavy ledger stock . . . . .	\$3.75—\$4.25
No. 1 magazine . . . . .	\$3.50—\$3.60
No. 1 book stock . . . . .	\$2.75—\$2.90
No. 1 manila cuttings . . . . .	\$5.00—\$5.25
No. 1 print manila . . . . .	\$2.25—\$2.50
Folded news . . . . .	\$2.25—\$2.35
Over issue, news . . . . .	\$2.50
Kraft . . . . .	\$5.25—\$5.50
No. 1 clean and mixed papers . . . . .	\$2.10—\$2.15

**NEW YORK MARKETS.**

New York, August 14.—The fact that it is the middle of the summer is quite apparent in the paper trade. There is a comparatively large volume of business being done but the market does not commence to be as active as it was not long ago, and buyers in numerous quarters show conclusively that they are absorbing at the moment only such amounts of paper as they directly need. Prices rule firm to strong, and the tendency in every case where there is a definite trend is distinctly upward. Manufacturers and jobbers are not pushing sales. In the first place they realize that this is the time of the year when the average user of paper holds aloof from buying; in the second place few mills or dealers who have unsold accumulations of paper to amount to anything. Such stocks as are in sellers' hands are firmly held and no one is resorting to price cutting to effect business. Exactly the opposite condition exists. With nearly every factor pointing to higher prices, owners of unsold lots of paper either are insistent on receiving full asked prices or else they are holding supplies in the calm belief that they certainly will secure the values wanted later on. A factor that is likely to prove an important one in

fixing prices on paper in the future is that of railroad freight rates. The advance in freight tariffs that has been granted by the Interstate Commerce Commission and due to become effective about the last of this month—the definite date not having been announced as yet—will materially increase the production cost of paper, together with other manufactured commodities, and will consequently make it necessary for paper manufacturers to revise prices on their product accordingly. As an example of this increased cost may be taken the opinion of President Philip T. Dodge of the International Paper Company, who says that the heavier cost of flannel raw material and fuel to mills will add at least \$3 per ton to the cost of manufacturing newsprint paper. That the increase on other grades of paper will be relatively as great is evident, and that manufacturers will of necessity be obliged to tack this additional cost onto the prices of paper is also evident. Here, then, is almost definite proof that paper prices will undergo revision upward within the near future if prevailing market conditions continue to obtain.

The newsprint situation discloses no new feature of any moment, neither is there any change reported in prices. Spot offerings are absorbed rather freely although demand for quick deliveries does not equal that of several months ago. That newspaper publishers are consuming less paper at present than earlier in the year is conceded, moreover this is the usual status of consumption at this season. Most publishers, and particularly the important ones, can therefore keep much out of the open market for a time and they are doing so not alone because they have current requirements covered but presumably because they hope that by doing so they may succeed in lowering prices. Standard news in rolls for spot delivery is selling at 11 to 12 cents per pound, and sheets readily command 13 cents a pound and higher. Demand is largely concentrated on sheet news and transient buyers seem to be having difficulty in acquiring all the supply of this kind of paper they want.

The book paper situation continues to be the strongest branch of the market. There is a serious scarcity of paper of this sort in seemingly every direction, and consumers, unlike those using other grades of paper, are doing all in their power to unearth available supplies, which means that a very active inquiry prevails. Prices are strong and buyers are not letting the stiff figures quoted stand in their way of getting paper when they locate unsold stocks. Machine finished book is freely bringing 17 to 18 cents a pound for spot delivery, while supercalendar book is selling at 19 to 20 cents and coated book from 21 cents upward.

Fine papers are in steady call and are moving in consistent fashion on contracts. Mills, with the exception of those shut down temporarily for repairs, are operating at close to maximum capacity and are shipping out their production about as rapidly as it becomes available. Locally the supply situation has improved somewhat owing to the freer movement of freight and the resultant receipt of larger amounts of paper from mills. Jobbers, however, have little stock on hand and are finding it a hard matter to fill their shelves for the reason that they have about all the supply under contract from mills sold to customers.

Tissues and wrapping are quotably steady and are moving in a volume quite satisfactory to mills and dealers at this juncture of the year. The board market is firm and demand is gradually increasing as boxmak-



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ers cover autumn requirements. Quotations on board are unaltered at around \$125 on news and \$115 per ton on chip but there is an upward tendency clearly apparent.

**GROUND WOOD**—There isn't as heavy a demand for mechanical wood pulp at present as prevailed a short time ago; still the market is attended by much activity for this period of the year and buyers freely admit it is just as difficult as ever to locate sizable tonnages of pulp. Producers have but scant lots to divert to the transient trade. Most of them have their output foreclosed for some months and those fortunate enough to have a surplus on hand are either saving the pulp for their own use of else to insure keeping regular customers supplied. Spruce ground wood for prompt delivery is settling at \$140 to \$150 a ton, and there is little question that a good deal more business could be easily consummated at these prices were the pulp to be had.

**CHEMICAL PULP**—Buyers of chemical pulp are generally pursuing a waiting policy at the moment and are keeping out of view as far as possible while limiting their purchases to pulp actually needed for immediate consumption. Of course some paper manufacturers are placing contracts, and there is, on the whole, a comparatively good spot inquiry, but generally speaking, demand does not commence to approximate that recently prevailing. Pulpmakers are not exerting pressure on buyers and are waiting for the latter to come to them, and such supplies as are obtainable in the open market are realizing prices close to the upper edge of present quoted values. Newsprint sulphite is quoted at 8 to 8.50 cents a pound at pulp mills, domestic easy bleaching at 9.50 to 10 cents, domestic No. 1 kraft at around 7.50 cents and bleached sulphite of domestic origin at from 12 cents upward.

**RAGS**—Trading in papermaking rags is very characteristic of mid-summer, yet in the aggregate there is a good movement into consuming channels and prices are marked by firmness in most cases. Some grades, notably roofing stock and other low-priced qualities, are being bought by mills at relatively low prices, but even in this end of the market there is a tendency toward advancement plainly visible. Dealers lay much stress on the dearth of large accumulations the country over and also on the decreased shipments from Europe to this market, and maintain that this will undoubtedly result in higher prices when papermakers resume buying on a broad scale in the fall.

New cuttings are quoted at strong figures, No. 1 white shirt cuttings being held at 23 to 24 cents,

new unbleached muslins at 17.50 cents, new washables at 10.50 to 11 cents, white lawns at 19.50 to 20 cents and fancy shirt cuttings at 13.50 to 14 cents. Old No. 1 repacked whites are worth around 13 cents, repacked thirds and blues about 4.50 cents and No. 1 roofing rags in the vicinity of 2.25 cents.

Arrivals of foreign rags at New York this week included 1,977 bales from Havre, 281 bales from Hamburg and 33 bales from Liverpool.

**PAPER STOCK**—Most grades of old paper are sought in consistent fashion by paper manufacturers and prices are notably maintained. One of the strong market factors at present is that collections are light, packers claiming to be getting no more than half of the tonnages usually available and laying the blame for this condition on the economy practiced by printers, department stores, and other extensive users of paper. Old folded newspapers are an active grade and board mills have difficulty in buying at less than 2.30 cents a pound at shipping points, while this price has been exceeded in some instances. Mixed paper of No. 1 quality is selling at 2 cents f.o.b. New York, heavy No. 1 book stock at 3.25 cents, old No. 1 kraft at 5.50 cents and No. 1 manila paper at 3 cents. White shavings are scarce and firmly held at around 8.50 cents New York for No. 1 hard white and 7.50 cents for No. 1 soft white shavings.

Receipts of miscellaneous paper stock from foreign sources at this port this week included 611 bales from Rotterdam and 24 bales from Liverpool.

**OLD ROPE AND BAGGING**—Old rope is off in price, with sales of No. 1 manila to mills reported down to 6.25 cents a pound f.o.b. New York. Most current business is against back orders and manufacturers are doing little new buying. Old bagging is in slight demand and buyers are obtaining wanted supplies at much their own prices. No. 1 scrap is quoted at as low as 2.25 cents per pound at shipping points.

Arrivals of foreign rope at New York this week consisted of 92 coils from Rotterdam.

#### PAPER MILL FOR OGDENSBURG.

A new paper manufacturing plant will be located at Ogdensburg, N.Y., in connection with the ground pulp mill of the Ogdensburg Paper Mills, Inc. The paper plant will be placed in operation as soon as the ground wood pulp mill is in full swing is the report.

Just where the paper making plant will be located has not been decided. The Ogdensburg Paper Mills, Inc., own land to the south of their pulp mill, but this may not prove suitable.

## Scandinavian American Trading Co.

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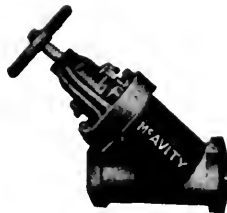
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**EXPORTS GAINED 60 PER CENT FOR APRIL.**

Pulp and paper exports from Canada for April, the first month of Canada's fiscal year, reached a total value of \$8,172,356, as compared with \$4,968,939 for April, 1919, an increase of \$3,203,417. They were made up as follows:

Month of April,	1919.	1920.	Gain.
Chemical pulp	1,120,990	2,936,633	1,815,643
Mechanical pulp	217,711	506,369	288,658
Paper and mfrs. of	\$3,630,238	\$4,729,354	\$1,099,116

The greatest gain was in unbleached sulphite, of which 397,359 cwt. valued at \$1,587,236 were exported in April this year as compared with 57,786 cwt. valued at \$352,485 last year. Of bleached sulphite, 131,161 cwt. valued at \$728,669 were exported this year, as compared with 80,259 cwt. valued at \$363,732 last year. Exports of sulphate (kraft) pulp for the month amounted to 163,533 cwt. valued at \$620,728 this year, compared with 131,375, valued at \$404,773 last year. Exports of mechanically ground pulp for the month were 198,664 cwt. valued at \$506,369 this year, and 161,449, valued at \$217,711 last year.

Newsprint formed the principal item of the paper exports for the month. There was, however, a falling off in quantity, although an increase in value, there being 899,342 cwt., valued at \$3,827,541, exported this year, compared with 920,592 cwt., valued at \$3,160,318 last year.

Exports of pulpwood for the month amounted to 40,433 cords, valued at \$420,741, a decrease from 68,680 cords, valued at \$629,189, a year ago.

The distribution of the month's exports was as follows:

	United Kingdom.	United States.	Other Countries.
Total paper.....	\$344,517	\$3,730,682	\$ 654,155
Total pulp.....	514,568	2,506,825	421,509
Pulpwood.....	\$859,085	\$6,658,248	\$1,075,664

A Chinese trust controls the dye used on firecrackers, made from ribunao, a Philippine wood. The same dye is used for sealing wax and Chinese ink.

**THE CHILDREN OF TREES.**

The birches that dance on the top of the hill  
Are so slender and young that they cannot keep still.  
They bend and they nod at each whiff of a breeze,  
For you see they are still just the children of trees;  
But the birches below in the valley are older,  
They are calmer and straighter and taller and colder,  
Perhaps when we're grown up as so solemn and grave  
We, too, will have children that do not behave.

—John Chipman Farrar.

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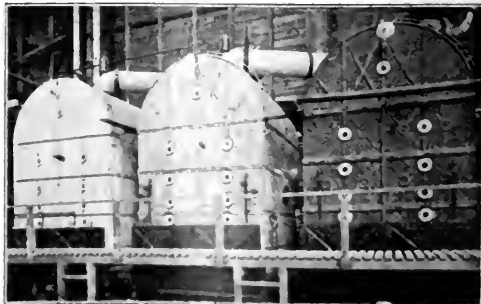
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# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., August 26, 1920.

No. 35

## TABLE OF CONTENTS

### Editorial:

Educating paper makers .....	887
Mr. Greaves pays us a visit .....	887
The presidential candidates and the paper question .....	888

### Special Articles:

Canada's pulp wood restrictions .....	889
The import of pulp and paper into the West Indies .....	895
Sweeping the air and water out of dryers on paper machines .....	897

### Miscellaneous Information:

Muck timber in the Tropics .....	893
China clay under the Microscope .....	894
A paper chase, not a joy ride .....	899
Forests better than 50 years ago .....	899
Review of recent literature .....	900
A new daylight lamp .....	902

### News of the Industry:

Fire destroys paper stock in Pittsburg ..	893
U. S. transportation conditions .....	894
Made first pulp at Bathurst in 1915 .....	894
Safety men to meet in Milwaukee .....	896
Spain to cancel duty on paper .....	896
Beveridge in Old Virginia .....	899
Installation of new paper machines in the United States .....	902
Pulp and paper news .....	903
Sawgrass pulp mill for Florida .....	901
Officers of the Kaministiquia Pulp and Paper Co. .....	904
Canadian industry in strong position .....	901
Damming Nipisguit for Bathurst .....	904
United States notes .....	905

### The Markets:

Canadian trade conditions .....	906
New York markets .....	908
The market for chemicals and feeds .....	911

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J. NEWELL STEPHENSON, M.S., Editor.

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# -:- EDITORIAL -:-

## *EDUCATING PAPER MAKERS.*

There will never be a time when experience and practical knowledge of paper making will be entirely replaced by any kind of education outside of the mill but the movement is rapid toward appreciation of the need for supplementing this practical knowledge and skill with a knowledge of the principles, materials and processes which underlie the manufacture of pulp and paper. Much of this knowledge is obtained by continued contact with materials and their manufacture into finished products but some of the underlying principles cannot be stumbled upon in any such uncertain fashion. Paper, of course, can be made, as it has been made, according to rule of thumb methods by men who have given little or no thought to what they were doing except to repeat mechanically what they had seen someone else do. But this lack of thought cannot possibly bring any improvement or progress in the industry. The men who have held positions of responsibility have been elevated largely because of their superior skill or their ability to get the maximum work from the employees over whom they have been made foreman or superintendent. These men have made good paper and no one will disparage their ability nor the results they have obtained. The time is now upon us, however, when these men who are for the most part well along in years, must be succeeded and because of the development along scientific lines in all kinds of manufacture it will be necessary to have men in charge, who have not only a practical knowledge of the industry, but who have, in addition, a training in the fundamental principles on which the industry is based. The possession of such knowledge in no way detracts from a man's practical ability as a paper maker but gives him the additional advantage of a view point which is elevated in proportion to the broadness of his educational opportunities and in consequence of which his horizon is the more extensive.

Seven years ago the University of Maine enrolled students in the first classes offered on this continent in a definitely planned pulp and paper course. Since that time more than 100 students have gone forth from that University, having studied both in the class room and the laboratory the characteristics of materials used in pulp and paper manufacture and the principles underlying the processes by which they are converted into the finished product. The University of Maine is admirably situated in a pulp and paper region

but there is room for more than one institution of this character and consequently the New York State College of Forestry, some years ago, began to make plans for a somewhat similar curriculum.

Just before leaving the College of Forestry to undertake the work of Secretary of the American Paper and Pulp Association, Dean Baker secured the services of Mr. C. Earl Libby as Professor in charge of the new work. Professor Libby graduated from the University of Maine in the pulp and paper course and since then has had considerable experience in the manufacture and testing of paper materials and products. The course which he has laid out in consultation with pulp and paper men is set forth in the last issue of the Pulp and Paper Magazine. It will be seen that New York State appreciates the forest as the foundation of its paper industry and forestry studies are made the backbone of the curriculum. It is probable that changes will be made in the curriculum as more extensive work and more complete equipment is possible and at the present time an excellent basis has been provided for those who wish to enter the work of the pulp and paper mills, particularly in New York State.

It is gratifying to the college, as well as to those who have assisted in planning the work, that a very large number of prospective students have inquired with regard to the pulp and paper course. Professor Libby will have his hands full. From the editor's recollections of the work at Maine he will have an experience that will bring great satisfaction and an opportunity of serving both the industry and the individual student which cannot easily be matched in any other line of work.

## *MR. GREAVES PAYS US A VISIT.*

The editor was delighted last Saturday afternoon to have a visit from Mr. J. L. Greaves, Editor of the "Paper Maker" and "British Paper Trade Journal." Mr. Greaves came over to take part in the deliberations of the Imperial Press Conference and accompanied the party part way on their trip across Canada. The time available at Ste. Annes was all too short to discuss the many subjects of mutual interest. It looks as if we shall have to continue the conversation by accepting a very cordial invitation to visit England and see the paper industry and meet the paper makers on the other side. This is a trip that we have long anticipated and hope soon to enjoy.

## THE PRESIDENTIAL CANDIDATES AND THE PAPER QUESTION.

(By the Associate Editor.)

The fact that the next President of the United States, in all human probability, will be a newspaper publisher has an interest for paper manufacturers, since it is by no means certain that the newspaper publishers of the United States, any more than those of Canada, have abandoned permanently the efforts they have put forth during the past five years to control the price and supply of newsprint paper by legislation. Both Senator Harding, the Republican nominee, and Governor Cox, the Democratic nominee, are owners of minor daily newspapers. They have both been affected by the abnormal conditions of the paper market during the past year and both are familiar, by actual experience, with the difficulties that beset the newspaper publisher as a result of these conditions.

Both Governor Cox and Senator Harding have expressed their views, as newspaper publisher-presidential candidates, for the benefit of their fellow publishers. These views were printed as authorized statements in *The Editor and Publisher* of New York, and indicate what sort of treatment newsprint manufacturers may expect from the White House after March 4th next if any of their problems should come before the next president for executive action.

James M. Cox, the Democratic candidate, says that he looks for continued prosperity for the publishers, "for the reason that the world continues to advance, and in proportion as this advance be made there will be certain increase in the eagerness of the people to keep abreast of the times. The popular agency is the newspaper." On the paper question, Governor Cox says:

"I think the white print situation has been created in considerable measure at least by the very elements that have upset the normal conditions of life generally the excess demand for labor beyond the supply, inadequate transportation facilities, etc. The quicker peace be legally realized, the sooner normal times will come."

And here is what Senator Harding, the Republican candidate and owner of the Marion, Ohio "Star" has to say about it:

"The newsprint prospect is improving. For illustration, I bought a carload of paper in the open market the other day at 6 cents. Six weeks ago I paid 11 cents. My contract, like most others, was reduced the first of the year, and I have been forced into the open market for four carloads. I have paid 5 1/4, 5 1/2, 11 and now 6. I notice that our railroads are restoring to Canada several thousand fiber box cars, and this is easing paper shipments to us, it must also ease the supply of materials to the mills.

But we must keep a sharp lookout for

the newsprint future. We will never again see paper at 2 cents, but we will see it at a price that is fair and in supply that is sufficient for all reasonable needs. I have seen it stated that 80 newspapers consume 60 per cent of our total print. On the face of it this is not a fair division. Publishers themselves should get together in commitments that will give all a just share. I shall be opposed, even when I myself am president, to any form of government control that might in any degree curtail the independence of the press. But the Government can help publishers to get a square deal, and it is my expectation that it will.

"There is the important element of reforestation to insure pulp supply, which is decidedly within the rightful province of the Government. This has been too long neglected. Twenty years are required to grow spruce trees, and the end of the available supply is not much further than that in the future. There must be a practical program of reforestation framed on a large scale and then it must be carried out.

"All this, of course, is close to my own heart. We are striving desperately to hold down the circulation of the *Star* to 10,000, having already reduced the size 30 per cent, while refusing many thousands of dollars' worth of advertising."

From all of which it would appear that whatever eventuates, the newspaper publishing interest in the United States is certain to have during the next four years "a friend at court."

Senator Harding's solicitude for a reforestation program is something that will commend itself to every publisher and every papermaker, although his estimate of the time it takes to produce a pulp-yielding spruce tree does not accord with our experience in Canada. Perhaps spruce attains a much more rapid development in Ohio.

### CORWERS.

The excellent tables on another page, compiled by Mr. E. H. Naylor show the capacity increase of new machines for United States paper mills. Canadian mills will find something to guide in choosing the best future outlet directions for some lines.

American papers, especially *The Sun* and *New York Herald* are giving special attention to Canadian news, and this feature is said to be very popular.

We haven't heard much lately regarding Mr. Brown's case against the Canada Paper Co., which was "arrested for fragraney," as it were.

The value of the product of the paper industry in the United States is over \$100,000,000 yearly.

## Canada's Pulpwood Restrictions\*

When you were good enough, through Mr. Ayres, your Forester, to extend an invitation to the Canadian Pulp and Paper Association to send a representative to attend this conference, your letter of invitation intimated that you were particularly desirous of having presented at this meeting a "full and frank statement of the Canadian point of view as regards the export tariffs placed upon timber entering the United States from the Crown lands in three of the Canadian provinces." You were also kind enough to suggest that such a candid statement as you invite would be of assistance in bringing about a mutual understanding between the two countries and, perhaps, in helping to clear the atmosphere of some of the misconceptions that appear to be abroad.

To me, as an official of the Canadian Pulp and Paper Association, has been assigned the pleasant and agreeable duty of coming to your meeting and responding to your invitation. In what I propose to say I can assure you that I have no other motive than to contribute, as far as may be, to bringing about that mutual understanding and to increasing, if possible, the goodwill that now, perhaps more than ever, should dominate our international relations.

At the outset I am tempted to paraphrase Sydney Smith's historic essay on the subject of "Snakes in Ireland," which, as you will recall, began and ended with the interesting but somewhat conclusive sentence, "There are no snakes in Ireland." With equal brevity and truth I might say, "There are no export tariffs upon timber entering the United States from Crown lands of Canada." But that would not be quite all of the story.

When the Canadian provinces were confederated into the Dominion of Canada, in 1867, one of the articles of Confederation conferred upon the respective provinces sovereignty and control over their own natural resources. In so far as the original provinces are concerned that condition still prevails. The same authority confers upon the Dominion Parliament the sole power to legislate on matters affecting tariffs, both as to exports and imports. Consequently, while the provinces control their public domain, including the forests and the products therefrom, they have no power to pass tariff legislation and have never attempted to exercise any. The Dominion Parliament, on the other hand, while it is without power to control the administration of the natural resources of the respective provinces, has the power to pass tariff legislation, but has never sought to exercise it in the direction of reducing the exports of timber to the United States.

Regulations have been adopted, it is true, by the Provinces of Ontario, Quebec and New Brunswick, which require that pulpwood cut from the Crown lands in those provinces must be manufactured into pulp or paper in Canada. These regulations certainly do operate to restrict, in a measure, the exportation of unmanufactured pulpwood from Canada to the United States. It is doubtful, as I shall endeavor to

show you later, whether their ultimate effect has been to deprive American pulp and paper consumers of their full share of Canada's forest products.

The regulations are not, contrary to some expressed beliefs, confiscatory or discriminatory in their character. They apply with equal force to all licensees without regard to nationality or other qualification. While admittedly based upon a policy of self-interest and self-protection, they are believed to be justifiable on both moral and legal grounds. They violate no contract, written or implied, and they deprive no one of any duly acquired right, vested or otherwise.

Provincial licenses to cut timber are issued for the period of one year, and while in practice they are automatically renewable when their conditions have been complied with, the courts have held that they confer no rights in perpetuity. Furthermore, they have always contained a provision making them subject to any future regulations the issuing government may, in its own interests, choose to impose. The requirement as to "home manufacture" is merely one of the applications made of this provision.

The chief argument of those who are challenging these regulations is that they unlawfully abrogate vested rights. We, in Canada, dispute this assertion. First, on the ground that, as stated, the licenses give the lessees no permanent rights in the property; second, that the rights were acquired subject to certain provisions which the provincial governments have since seen fit to avail themselves of, and, third, because we maintain that the complaining lessees have suffered no real loss by reason of the regulations, but, on the contrary, have profited greatly by the increment of value in their holdings. They could to-day sell their leases for many times what they cost. They can also sell their pulpwood, if indisposed to manufacture it themselves, at a price representing an enormous profit on their original investment.

It has been stated as a cause of special grievance in some of the arguments advanced that, "American manufacturers had expended hundreds of thousands of dollars improving the rivers, building dams and piers, constructing taking-out and wood-preparing plants," and, that, "all this investment was, in four days' time, made dormant and unproductive," by the imposition of the "home manufacture" regulation by the Quebec Government. The facts are, however, that at the time the restrictions were first imposed, the American manufacturers who were then affected went before the Quebec Government and complained that it would be unfair to make the restrictions operative at once as they had large quantities of logs in the process of making which could not be turned into lumber. The Government, recognizing an element of justice in the complaint, asked the companies to make a statement as to the quantity of logs on hand at their mills as well as the amount hung up in the drives and in the upper countries, and, on the basis of the estimates submitted, allowed uninterrupted exportations to proceed. The impression prevails in Canada that some of the companies' estimates were extremely liberal and included not only the wood already made, but all they could hope to make for several years to come. (River improvements, logging accessories, etc.

\*An address delivered by Edward Beck, representing the Canadian Pulp and Paper Association, before the Annual Forestry Conference of the Society for the Protection of New Hampshire Forests, New London, N.H., August 25, 1920

are just as useful in getting out wood for domestic conversion as for export in the raw state.—Ed.)

I have also seen it stated that the sole opposition to removing these restrictions at this time comes from the paper-manufacturers of Canada who are said to desire to monopolize the newsprint market, to keep up prices and to "destroy the American newsprint industry." This, again, is very far from being the truth. Canadian pulp and paper men, naturally, are interested in preserving their raw material as far as possible, but they are not responsible for the policy of which complaint is made. Most certainly they are not trying to monopolize the market nor to injure their fellow paper manufacturers on this side of the border. Doubt, indeed, has been expressed as to whether the Canadian paper mills would not be better served, from a competitive standpoint, by permitting the exportation of sufficient Canadian pulpwood to keep the paper mills in the Eastern States in operation, rather than to accept the alternative of seeing the owners of these mills come into Canada and erect new, modern and efficient mills, as they are now doing, to compete with the Canadian manufacturers on even terms. It is generally conceded that the American mills in question are operating at a disadvantage as to production costs compared with Canada's more modern establishments. It is conceivable that it might be to the Canadians' advantage to have them so continue.

The regulations complained of were adopted in response to the outspoken demands of public opinion in Canada and for the purpose, as already stated, of conserving Canada's raw materials and of building up home industry. They are kept in force for these precise purposes. That there is little likelihood of their being modified or repealed is plainly evidenced by recent statements on the subject given out by the responsible heads of the different provincial governments concerned, as well as by the editorial expressions in the Canadian press which regards their maintenance as of vital concern to the country's welfare.

Another alleged grievance that I see lodged against the Canadian paper manufacturers is that they require payment for their products when sold in the United States to be made in United States funds, so that, to use the words of our detractors, "you are giving the Canadian manufacturer a price of from 12 to 18 per cent higher than your own manufacturers receive." This extraordinary and obviously misleading assertion is based upon the existence of a discrepancy in exchange between the two countries which during the past year has ranged from 12 to 18 per cent in favor of American funds. Payments to both Canadian and American manufacturers for paper sold in this country are made in identical funds. If the American manufacturer thinks it any advantage to increase the numerical measure of the dollars he receives he can do so by transposing them into Canadian funds. The rule, of course, works both ways. The Canadian paper manufacturer, however, does not complain when he is required to pay for his coal, his sulphur, his kaurin and his dyes which he buys in the States, nor his carriage charges to American railroads and express companies, in American funds, obviously to his financial disadvantage.

In the general trade between the two countries Canada falls short by approximately three hundred million dollars a year of selling to the United States as

much as she buys from this country. In our last fiscal year, to be exact, Canada bought from the United States merchandise to the value of \$746,937,509 and sold her merchandise to the value of \$454,923,170, thereby creating an adverse balance against Canada of \$292,014,339, which Canadians paid in their depreciated funds on the basis of from \$1.12 to \$1.18 for every dollar's worth of goods bought.

Despite this enormous discrepancy in trade between the two countries and the overwhelming advantage enjoyed by the United States, some critics appear to think that we ought to sell our paper—which is one of the few commodities we have to barter—to American consumers on the basis of payment in Canadian funds! Not content with coveting our forest resources they would deprive us of whatever small advantage we may have in the commodities which we have to sell. Their contention reminds one, involuntarily, of the fabled patriarch who, while possessing flocks and herds in abundance, still envied his neighbor his lone ewe lamb, and who incurred the wrath of God by the desperate means he took to gain possession of it. Perhaps your wise president had the simile in mind when he withheld his approval from the so-called Underwood Resolution.

However, I did not come here to discuss in detail, or to attempt to refute all the arguments that have been advanced by those who are striving to make our provincial timber laws a political issue between the two countries, nor do I propose to do so. In my opinion, the issue between certain American lessees of Crown timber limits in Quebec and the authorities of that province, which is at the bottom of all this agitation, is one for judicial determination, if at all, rather than for political action. The fact that the limit-holders, after allowing twelve years to elapse while evading a legal test, are now busily engaged in a campaign to make the issue political, merely, again in my opinion, emphasizes the weakness of their position. At any rate, it is generally felt in Canada, that neither the Dominion as a whole, nor any of the provinces, has any reason to avoid the strictest enquiry into the justice and equity of their timber laws by any impartial and unbiased tribunal. Certainly we should feel it to be a cause for great regret if these laws were made the excuse for embroiling us in an international wrangle with our good neighbors to the South. It is true that up there we have heard echoes of talk in Washington concerning "retaliation," "strong arm methods" and the application of the "big stick" to the back of the Dominion, but we haven't taken it very seriously. We refuse to believe it represents the true spirit of the American people.

What I have said about declining to undertake in detail a justification of the provincial timber regulations, so far as they affect American licensees, for the reasons I have set forth, will not, I take it, preclude me from giving you a brief statement as to just what the regulations consist of, and telling you how, when and why they were brought into being.

It was the Province of Ontario which led the way in adopting restrictive legislation for the protection of its forests and as a means of encouraging home industry. The great bulk of the timber berths of Ontario front on Lake Huron. With the depletion of the pine lands of Michigan and Minnesota and other lake States it became the practice of American saw mill owners to draw their supplies of pine timber from Ontario, the logs being floated across the lake in their

rough state. In time, it became apparent to the people of that province that if they were going to avoid the complete destruction of their pine forests, and if they were going to obtain a more adequate return for the use of their natural resources than was represented by the practically nominal ground rents and stumpage dues paid by those who were then exploiting them, they would have to adopt some measure of self-protection. Consequently, an Order-in-Council was passed January 13th, 1900, which was later amended by a law (63 Vic. Chap. 11), requiring timber cut from the Crown lands in that province to be manufactured in Canada. The almost immediate result was that a substantial lumber industry was built up in Ontario and that the provincial treasury, enriched by greatly increased returns from the disposal of the forest products, was able to provide a better system of fire protection, to enforce stricter cutting regulations and generally to prevent needless forest waste.

It was not until 1902 that this regulation, which had been found of so much benefit to the province when applied to pine timber, was also applied to pulpwood.

In the Province of Quebec, which is the seat of the dispute we are discussing, licenses to timber Crown lands are disposed of at public auction. In the terms of the law (R.S. Quebec, Act, 1597) the license thus acquired entitles the holder, "to cut timber on ungranted lands of the Crown at such rates, and subject to such restrictions as may, from time to time, be established by the Lieutenant-Governor in Council, and of which notice shall be given in the Official Gazette."

Article 1598 provides that "No license shall be granted for longer than twelve months from the date thereof.

Article 1600 stipulates that "such license shall vest in the holder thereof all rights of property in all trees, timber, and lumber cut within the limit of the license during the term thereof, whether cut by authority of the owner of the license, or by any other person with or without his consent."

The Regulations now in force by virtue of the first cited article of the law are embodied in an Order-in-Council under date of April 26th, 1910, revoking all previous regulations "incompatible with the present" and amended in its turn by an Order-in-Council of June 13, 1918.

Other clauses having a bearing upon this discussion are:

"1.—All licenses to cut timber are subject to a yearly ground rent of five dollars per square mile or fraction of a square mile, dating from the 1st September, 1910. They are granted for twelve months from the first of May to the thirtieth of April and after their issue no claim shall be admitted for the repayment of any overcharge for ground rent or fire tax due to the incorrect measurement of the area of the limit."

"2.—Licenses expire on the thirtieth of April following the date of their issue, but the licensee having complied with existing regulations is entitled, up to the first of September following, to a renewal of his license. He shall forfeit such right through any infringement of the law and of the regulations. The Minister of Lands and Forests may, however, permit the renewal of the license on payment of the ground rent and of any other penalty he may be pleased to impose."

Besides increasing the stumpage dues, the amendment adopted in 1918 also raises the ground rent to \$6.50 for the years 1919-20 to 1923-24, and to \$8.00 for the years 1924-25 to 1928-29 inclusively, and provides that such ground rent may at any time be augmented in the case of licensees who do not exploit

their limits, the Crown to determine the quantity of wood to be cut for constituting sufficient exploitation.

It is unnecessary to quote the whole of the Clauses 4, 5, and 6 of the Order-in-Council, but they stipulate that "transfers of limits or of divided or undivided portions thereof are effected in writing, subject to the Minister's acceptance and to the payment of a transfer bonus of four dollars for every square mile or fraction of a square mile."

Regarding the right of renewal, while some licensee holders are wont to contend that their licenses are tantamount to a permanent grant so long as they comply with the terms of the licenses, Canadian courts, in analogous cases, have held to the contrary, maintaining that they are merely annual leases and nothing more. The courts have also held, in similar cases that the State, in its capacity as proprietor of the land, "may do what any subject proprietor may do, when proposing to dispose of his property, viz.: attach to the contract a condition not impossible of performance or unlawful *per se*, or prohibited by any existing law."

At the present time, some prospective investors in Quebec's pulpwood limits are asking the Government to change the law and to issue leases for a given term of years, instead of on the year-to-year plan as at present, holding that capital would be easier to obtain and better satisfied with such an arrangement.

In conformity with its expressly reserved rights to make such regulations as to the use of timber cut under license, the Quebec Government adopted a regulation on April 26, 1910, which reads:

"All timber cut on Crown lands after the 1st of May, 1910, must be manufactured in Canada—that is to say, converted into pulp or paper, deals or boards, or into any other articles of trade or merchandise of which such timber is only the raw material. The following shall not be considered as manufactured within the meaning of the present regulation: Timber simply cut into lengths piled, barked or otherwise worked preliminary to the manufacture of pulp or paper, deals or boards or any other articles of commerce." New Brunswick passed similar legislation on April 26, 1911.

There are no statutes prohibiting or regulating the export of pulpwood from Nova Scotia or British Columbia.

This, in brief, is a summary of the legislation affecting the export of timber from the various provinces.

It is, of course, clearly to be understood that the existing regulations do not affect the exportation of pulpwood cut from lands in private ownership. These exports, for many years past, have averaged around one million cords annually. They provide approximately one-fifth of the annual pulpwood consumption in the United States. Nor do they affect the export from Canada of manufactured pulp or of newsprint.

During the Canadian fiscal year 1918—the latest for which official returns are available—the quantity of pulpwood cut in Canada amounted to 3,560,280 cords, of which 2,210,744 cords were used in domestic manufacture and 1,349,536 cords were exported to the United States. During the same period 234,000 tons of chemical pulp, representing 468,000 cords of wood, 215,084 cords of mechanical pulp, representing 215,084 cords of wood, and 560,000 tons of paper, representing 825,000 cords of wood, were exported from Canada to the United States. Thus the United States, during this period, imported from Canada in the form either of wood, pulp or paper the equivalent of 2,857,620 cords out of a total cut of 3,560,280, or approximately 80%. This does not bear out the charge that Canada is discriminating against the United States in with-

holding her pulpwood supplies from this country. On the contrary, it shows that the United States is benefiting practically to the same extent as though the forests were her own. Returns for the later years, when available, will only serve to emphasize this point.

The real question at issue is not whether this material shall be available for the use of American publishers, but whether it shall go forth in the form of raw pulpwood to the United States, or shall be put through at least one stage of manufacture in Canada.

A word may be permitted as to the fundamental purpose behind these restrictive regulations. It is nothing more nor less than the same purpose, which is, I take it, the motive spirit behind your organization and behind this conference, namely, the conservation of our forests and the inauguration of measures looking to a permanent supply of timber therefrom.

There was a time, not so very long ago, when the belief was quite general that the Dominion of Canada and particularly the Province of Quebec possessed illimitable forest resources. In fact, much of the argument in favor of lifting the export restrictions today rests on this erroneous proposition. It was a commonly accepted theory that no matter how prodigally those resources were used there would still be a vast supply sufficient to meet every requirement for practically all time to come.

If this sounds like an exaggeration to you, I should like to quote from a report made by one, Paul Blouin, Superintendent of Forests of Quebec, to the Minister of Mines and Fisheries of that province, March 31st, 1903—just seventeen years ago. It was used as the basis of a speech by the Hon. S. N. Parent, at that time Premier of Quebec, before the Legislative Assembly of the province on April 25th, 1903, in reply to a demand made by some of the members that the Province should impose a stumpage fee of \$1.90 a cord on all timber cut on the Provincial Crown lands and rebate \$1.50 of the amount for each cord of wood manufactured in the province. (It may be said in passing, that this method had previously been tried out and had been found unworkable.)

This, then, was the report of the Forester in question:

"There are at present 62,952 square miles of land under license to cut timber.

If the quantity of pulpwood contained in that territory is estimated at 3,000 cords per square mile, then we obtain a total of 200,000,000 cords. This number contains only the pulpwood which it is lawful to cut according to the regulations, that is to say trees measuring 7 inches or more at the stump.

To exhaust these 200,000,000 cords of pulpwood at the rate at which it was cut in 1901—1902, that is at about 50,000 cords per year, it would require about 4,000 years, and this is without taking into account the trees of under 7 inches in diameter. If we take into account the constant growth of trees, it would take a far greater number of years to exhaust our supply at the present rate of cutting.

If we wish to take into account all pulpwood, including trees which are not of the required size at present, we see that we could easily arrive at a total of a billion cords, which would last over 20,000 years.

And there still remain 100,000 square miles of forest which are not under license."

Commenting on this, Premier Parent said:

"To use up these 200,000,000 cords not including the small trees which are growing and which would provide for the reserves of the forest in the course of 25 years, it would require the store of about 1,000 years at the rate at which pulpwood was exported to the United States in 1901—1902,

that is, 50,748 cords. In the year 1900—1901, there were only 30,360 cords exported from our Crown lands.

"Now that the resources of our forests are known, it may be well to ascertain how many cords of pulpwood were exported from Crown lands last year. There were 50,748 cords exported. . . . And this is what is called the giving away of the products of our forests to the Americans! The 250,000 cords which form the balance of the exportation to the United States (for there were about 300,000 cords exported) came either from the seignories of from lots held under letters patent, which cannot be affected by the rules regulating Crown lands. The right of which I spoke could only affect about 50,000 cords, and yet we are accused of causing the destruction of our forests!"

You will observe that this more or less official estimate of the life of Quebec's Crown land pulpwood resources—that they were sufficient to meet all requirements for 4,000 years, or, if the maturing of the growing stock was taken into account, over 20,000 years—practically forever—was made only seventeen years ago. In view of these exaggerated and since totally discredited ideas as to the extent of Quebec's pulpwood resources, held by those in authority in those days, it is to be wondered at that in the early days they were only too anxious to exchange the people's forest heritage for whatever mess of pottage was offered.

Paul Blouin's estimate was based upon an annual cut of 50,000 cords. To-day the annual consumption of pulpwood in Quebec, exclusive of that cut for exportation, exceeds 1,100,000 cords while the "expectancy," to use an insurance term, has dwindled, according to the best authorities, to at the most 50 years' supply at the present rate of use, and the ratio at which the wood is being consumed is increasing every year.

In contrast to the optimistic utterance of Premier Parent in outlining Quebec's timber policy of less than two decades ago I should like to call attention to that of the present Premier, the Hon. L. A. Taschereau, announced just a few days ago, and based upon a knowledge of to-day's conditions.

He said:

"The time has come, it appears to us, to regularize the cutting on limits by fixing a maximum of the annual cut, to prevent the destruction of our forests, and a minimum to stop speculation and to assure us a reasonable revenue from the cutting rights. Reforestation should be immediately undertaken and encouraged with energy."

Arguments put forth in Washington as to the extent, duration and annual increase of Quebec's pulpwood resources, and which seek to convey the idea that 24,300,000 cords of wood could be harvested annually without impairing the capital stock are entirely fallacious and have been authoritatively exploded in documents, copies of which are placed at your disposal. The facts are that the Canadian Provinces are under just as great a necessity for conserving their timber resources as are any of the States which you gentlemen here represent.

From an economic point of view you will agree that the cutting of raw pulp wood for export involves no permanent industrial development. The home manufacture of pulp and paper, on the other hand, means the building of factories, the employment of skilled labor, the development of new towns, the growth of cities, scope for increased immigration, better home markets for agricultural and manufactured products, the increased investment of domestic and foreign capital, and the increase of national prosperity in general. Under the regulations complained of Canada has built up an industry now capitalized at \$300,000,000, with



an annual production of nearly \$120,000,000 and an export business of well over \$100,000,000. There are upwards of one hundred establishments engaged in the industry. Consequently the question of the conservation of Canada's pulpwood resources to maintain the industrial plants already established and to induce the establishment of others in the future is a pertinent one. The necessity of providing permanent supplies for the industry requiring so great an investment of capital is also an important factor and necessitates conservative forest management. Many millions of dollars of United States capital are already invested in the pulp and paper industry of Canada. This will be jeopardized, together with much native capital, unless the continuity of supplies of raw material can adequately be maintained, which would be impossible were unrestricted exploitation to be permitted.

Canada's great need to-day, like that of the New England States, is the inauguration of a reforestation policy which will insure a permanent supply of timber for her wood-consuming industries. Without it the Canadian pulp and paper industry will be confronted within a comparatively few years with a similar fate to that which is now said to be threatening the American industry.

In conclusion, let me repeat that there is no need for any bitter controversy over this question. There is a most cordial and friendly community of interest between the United States and Canada, not only in the newsprint matter, but also in regard to many other matters, which should be sufficient to prevent any such dispute continuing further, so long as neither party commits any act of injustice. The Crown Land Regulations of the Canadian Provinces are not an act of injustice; they are merely a natural exercise of the landlord's right to secure the fullest development of his own property. It is not the fault of Canada that certain United States pulp and newsprint mills, owing to miscalculation or mistreatment of the United States' wood supplies, now find themselves in a position where they cannot obtain pulpwood, except at a greater cost than if they could bring it from Canada. The Canadian Provinces have never bound themselves to supply pulpwood from their Crown lands to such mills. The Canadian Provinces are under no obligation to make up for the lack of domestic supplies, or to conform with their mistaken expectation that they would always be permitted to remove pulpwood from Canadian Crown Lands without performing any manufacture upon it within Canadian borders.

Canada, as you know, came out of the war with a public debt of more than two billion dollars, as compared with some three hundred millions in 1913. With a population of something over eight millions, the burden is no light one to carry. Her sole source of public revenues is the taxation of her people and the wise utilization of her raw materials, one depending upon the other. In the words of Sir John Willison, President of the Canadian Reconstruction Association: -

"We must either manufacture the raw materials of Canada within the country, thus employing labor, rearing new communities, providing local markets for merchants and producers, strengthening the national structure, making the back of Canada strong to bear its accumulating burdens, or the sons of Canada will follow these raw materials out of the country, establish themselves in foreign industrial centres, and, more and more, from year to year, the national burden will become heavier and the issue of the great political experiment in which we are engaged become more difficult and uncertain. Every sound economic and natural reason, therefore, demands

that the raw materials of Canada shall be manufactured in Canada and the Canadian people protected in the possession and control of their natural inheritance."

Citizens of the United States, we feel satisfied, who will study the subject as you are doing, will come to appreciate this situation, and will realize that whatever the politicians may say or do for political effect or political profit, and whatever self-interest may prompt others to allege, there is no real basis for the charge that Canada is doing any more than wisely utilizing her natural resources, so far as she is able, for the upbuilding of her own country and for the well being of her citizens, and that in the doing of it she is violating no principle of equity or justice, is imposing no hardship upon anyone, and is breaking no covenant entered into in good faith with citizens of a neighboring and friendly country.

### MUCH TIMBER IN THE TROPICS.

Tropical lumbering possibilities in lower Mexico and South and Central America are enormous, both in hardwoods and yellow pine, and in most cases, contrary to the opinion of those unfamiliar with the situation, the timber is easily accessible if operated under modern methods, according to H. C. Kluge, who has just returned from British Honduras, where he investigated a half million acre tract of yellow pine timber owned by an American corporation, for James D. Lacey and Co., of New York. The Lacey company conducts investigations of this character in all parts of the world.

Mr. Kluge, who has devoted about sixteen years to tropical timber cruising, spent about three months on the particular tract mentioned, his investigations being made from the standpoint of operating possibilities. On the tract he picked out approximately 500,000,000 feet of merchantable yellow pine timber which was admirably located for logging and transportation. Describing the character of timber found, Mr. Kluge said it compared favorably with the Cuban pine of Southern Florida.

With the exception of mahogany and cedar, Mr. Kluge said, the vast forests of tropical hardwoods have scarcely been scratched and there are billions of feet of excellent merchantable hardwood timber, most of which can be profitably operated under modern methods of transportation. The hardwood forests extend through lower Mexico, Guatemala, British Honduras, Spanish Honduras, Nicaragua, Costa Rica and the Panama Republic. In some localities, he said, there are found large tracts of yellow pine timber such as the tract he inspected for James D. Lacey and Co., in British Honduras, but as a general rule, hardwoods predominate throughout the tropical region.

As to conditions in the Tropics, Mr. Kluge said there are numerous small rivers winding through the forests but in a very few cases are they suitable for logging purposes. An operation to be made successful, he pointed out, should be carried on under modern railroad methods, and in many regions the lay of the land is admirably suited to this character of operation and development.

### FIRE DESTROYS PAPER STOCK IN PITTSBURGH

Fire early Sunday morning destroyed the warehouse of the Pennsylvania Paper Stock Company on First avenue, Pittsburgh. The blaze was a spectacular one, and the loss is estimated at \$50,000.

## CHINA CLAY UNDER THE MICROSCOPE\*

### Its Tenacity as a Paper Making Ingredient.

When a well-defined crystal, not too thin, is examined under a microscope, in oil formed by a mixture of oil cassia and oil cloves, of about the mean refractive index of the mineral (1.563 D. light at 60 Fahr.), it is almost invisible in monochromatic yellow light, but may be located between crossed Nicols. In ordinary lamp light or daylight it is more readily observed. By racking back the microscope from the focus the image fades away in a reddish-brown light, and racking forward in a sky-blue light.

The refractive index of the mineral is about as follows in lights of different refrangibility:—

Red . . . . .	1.562
Yellow . . . . .	1.563
Green . . . . .	1.571
Blue . . . . .	1.582

These figures were obtained by mixing oils of cassia and cloves till the mineral showed the Becke effect, when immersed therein, alternately higher and lower after rotation through 90, the polariser being in the axis of the instrument. The refractive index of the oil in the particular light was then determined on the refractometer, using combined glasses, or the gelatine films employed for near approaches to monochromatic light in color photography. The same glasses or films were used over the eye-piece of the microscope in making the observations. The results are given as near approximations to the truth. They were obtained in sunlight concentrated by an achromatic condenser N.A. 0.2 from a plain black glass reflector. The observations were quickly made before the sunlight could raise the temperature of the oil. The red light proved most difficult. There may be an error of one of two units in the third decimals, especially at the ends of the spectrum.

### Changes After Grinding.

It may be here noted that kaolinite (contained in china clay) undergoes a curious change by grinding. The refractive index falls from about 1.563 to about 1.52 for D. light as it is higher than 1.515 and lower than 1.522. This change was observed in trying to make an artificial clay by grinding well-crystallised kaolinite in an agate mortar for the purpose of studying plasticity. It was found that the fine powder no longer gave a good ultramarine in oil of 1.563 and only a pale color in oil of 1.52, but oil of the color well in a mixture of ethyl cinnamate and olive oil about that refractive index, or solution of mercury potassium-iodide, must be employed. Not only does the mineral fall in refractive index, but it seems to become isotropic even when examined in sunlight between crossed Nicols, though a doubtful reaction is got from the scales when seen edge on.

### Ultramarine.

That the lower refractive index is not due to the minuteness of the particles is certain, because, when china clay is suspended in water until the coarser part has settled, it is found that the clay remaining in suspension is fine enough to pass through filter paper has exactly the same refractive index and gives as good an ultramarine as the coarser part when dark ground illumination is employed.

\*Extract from an article by Mr. Allan B. Dick on "Some of the Optical Properties of China Clay" in the Government Handbook of Practical Geology.

### As Paper Fibre Adherent.

When china clay is viewed by dark ground illumination and mounted in a suitable liquid, the blue color may be no longer discernible, on account of the white light reflected from foreign matter. In a sample of paper known to contain 30 per cent. of china clay, the mineral could be detected when the paper was immersed in oil of 1.563. So obstinately does the clay adhere to the fibre that it cannot be washed out after teasing in water. After boiling in water containing some caustic potash, a rough separation of the greater part of the fibre can be effected by teasing. The residual clay then shows the typical color in suitable oil on dark ground illumination. It is further probable that the alkali removes some of the size used in the preparation of the paper, and cleans the surfaces of the particles of the clay.—China Clay Trade Review.

## U. S. TRANSPORTATION CONDITIONS.

Discussion of the effect of the forty per cent. increase in freight rates granted to the railroads of the nation by the Interstate Commerce Commission was the most important feature of the general paper market here. The consensus of opinion was that the freight rate increase will add to the costs of production and distribution, with the producer, jobber, dealer and consumer sharing the additional expenses.

That the cost of producing newsprint paper will be increased by \$3 per ton, is the opinion of Philip T. Dodge, President of the International Paper Company.

"It requires about four tons of raw material to manufacture one ton of paper," said Mr. Dodge, "and the increased cost of shipping supplies not only to the freighting of the finished product but to the shipping of raw materials to the mills."

There were strong, steady and weak spots in the general paper market. The best demand and strongest tone were evident in the markets for book paper, kraft, bonds, ledger, newsprint and pulp and slightly higher prices have been established. The rag, bagging and rope markets continued very weak with further price declines being noted on all grades.

Dealers here have expressed the belief that there will be a big buying movement in an endeavor by many consumers to secure as much paper as possible before the increased freight rates go into effect.

The railroads, with the exception of the Pennsylvania Lines, continue to show steady improvement, although there is still some congestion at the terminal and switching points. With increased revenue, however, it is believed that the railroads will be in a better position to settle labor difficulties, obtain new equipment and make necessary repairs and improvements, all of which will make for better transportation facilities. And with the coming of more nearly normal shipping conditions business generally will improve.

## MADE FIRST PULP AT BATHURST IN 1915

The Bathurst Lumber Company Limited, was organized in 1907. The capital stock is five million dollars of which three millions have been issued. It was primarily purely a lumber company, but in 1915 it began the manufacture of pulp and now turns out over one hundred tons of sulphate and sulphite pulp per day. A paper mill which will carry the manufacturing process a step further is now in contemplation and may become a reality in the near future.—(The Busy East).

# The Import of Paper into the West Indies and British Guiana

Trade Commissioner E. H. S. Flood.

Barbadoes, June 8, 1920.—From time to time inquiries have been made by Canadian firms for information in regard to the paper trade in the West Indies and British Guiana. I have therefore prepared a memorandum dealing with this matter, and have given statistics showing the imports for the pre-war year 1913 and the ensuing years to 1918 from the various colonies, with the exception of Grenada and the Leeward Islands, where the figures for 1918 are not yet available. The statistics show the value of the import of paper of all kinds, but in this connection it is somewhat unfortunate that the quantities are not available, as all paper imported into these colonies is either free under the preference or subject to an advalorem duty, and the quantities are not given in the blue-books.

In 1913 the value of the total import of paper—including printing, writing, etc.—was £99,326, nearly half of which was credited to the United Kingdom. The value credited to Canada and the United States was £2,908 and £24,321 respectively, and the amount to other countries being about the same as that from the United States. It will be seen that the total import of paper from "other countries" in 1913 was £24,533, which was nearly one-quarter in value of the total supply. The bulk of this paper came from Europe, the value from Holland being about £12,000, and from Germany £6,000, and France next in order. During the period of the war Holland continued to supply a certain amount of paper, but Germany dropped out entirely, except a small amount in 1914.

In the last year for which there are available statis-

tics, that is 1918, the value of the import had about doubled, being £198,360. The value credited to the United Kingdom was about the same as in 1913, but as paper up to that time had increased to over double the value, this would indicate that less paper had been imported into the West Indies for that year, and that the quantity from the United Kingdom had dropped about one-half. The increased imports were from the United States, valuing £120,793. There was an increase also from Canada, the value of the total import being £10,050, which would indicate that Canada had also sent more paper irrespective of the price to the West Indies. In this year the total import under "other countries" was £16,844, out of the total import of £198,360, the countries of origin being for the most part France and Holland.

It will be seen that in Trinidad, the Windward and the Leeward Islands, all paper is included under one head, without being divided into printing, writing, etc., and that the same classification is adopted in Barbadoes, with the exception that in this island "manufactures of paper" are classified separately, which is, however, only a small item. In the colonies of Jamaica and British Guiana, however, the imports are divided into "printing," "writing," and "other sorts of paper," which gives exporters information of a more definite character in regard to the trade.

In 1913 printing paper was sold here at 2½ to 3 cents per pound, and during the first two years of the war there was only a comparatively slight advance in the price of about 4 cents. This continued to the middle of 1917. A steady advance took place in 1918 and

1913.

	United Kingdom £	United States £	Canada £	Other Countries £	Total £
Jamaica . . . . .	18,358	16,047	530	7,008	41,943
Barbadoes . . . . .	2,609	1,413	355	3,726	633
Trinidad . . . . .	9,925	2,989	1,161	5,560	19,635
British Guiana . . . . .	12,611	1,849	547	5,878	20,885
Leeward Islands . . . . .	1,792	1,509	249	1,121	4,671
Grenada . . . . .	929	281	50	250	1,510
St. Vincent . . . . .	843	107		173	1,123
St. Lucia . . . . .	397	126	16	284	823
	47,464	24,321	2,908	24,533	99,326

1918.

	United Kingdom £	United States £	Canada £	Other Countries £	Total £
Jamaica . . . . .	10,387	29,266	1,339	2,567	43,559
Barbadoes . . . . .	5,743	11,409	1,976	1,407	989
Trinidad . . . . .	12,596	44,111	4,130	1,552	62,389
British Guiana . . . . .	18,045	27,531	1,162	7,728	54,466
Leeward Islands . . . . .	819	5,384	917	2,112	9,232
Grenada . . . . .	929	281	209	38	3,134
St. Vincent . . . . .	727	239	101	159	1,226
St. Lucia . . . . .	1,170	1,152	216	292	2,380

continued to rise, and to-day the price of newsprint is at the abnormal figure of 18 cents per pound, owing to the difficulties of transportation and the general shortage of this commodity.

Jamaica, 1918.			
	Enumerated £	Writing Paper £	Printing Paper £
United Kingdom . . . . .	5,861	2,776	1,750
United States . . . . .	12,623	4,343	12,300
Canada . . . . .	534	805	
Spain . . . . .	2,032		
Other countries . . . . .	501	34	
	21,551	7,958	14,050

Trinidad, 1918.			
United Kingdom . . . . .			£12,596
Canada . . . . .			4,130
United States . . . . .			44,111
Holland . . . . .			867
France . . . . .			355
Other countries . . . . .			330
			£62,389

Barbados, 1918.			
	Paper £	Paper Manufactures	
United Kingdom . . . . .	5,743	6265	
United States . . . . .	11,409	413	
Canada . . . . .	1,976		
France . . . . .		249	
Other countries . . . . .	1,407	62	
	£20,535	£989	

Grenada, 1918.			
United Kingdom . . . . .			£1,186
United States . . . . .			1,701
Canada . . . . .			209
France . . . . .			38
			£3,134

St. Lucia, 1918.			
United Kingdom . . . . .			£1,170
United States . . . . .			1,152
Canada . . . . .			216
Other countries . . . . .			292
			£2,830

British Guiana, 1918.			
	Printing Paper £	Other \$	
United Kingdom . . . . .	3,797	82,816	
United States . . . . .	22,580	109,572	
Canada . . . . .		5,581	
Holland . . . . .		13,724	
France . . . . .		15,108	
Other countries . . . . .		7,962	
	£26,377	\$235,063	

**St. Vincent, 1917.**

	Paper and manufacturers of paper £	Printing Paper £30
United Kingdom . . . . .	568	
United States . . . . .	239	
Canada . . . . .	101	
Other countries . . . . .	104	
	£1,012	£30

**Leeward Islands, 1917.**

United Kingdom . . . . .	£ 819
United States . . . . .	5,384
Canada . . . . .	917
Other countries . . . . .	2,912
	£9,232

**SAFETY MEN TO MEET IN MILWAUKEE.**

The annual convention of the National Safety Council will be held in Milwaukee during the week of September 27th. Following is the interesting program of the Paper and Pulp Section, of which Mr. G. W. Dickson, of the Riordon Co. is vice-chairman.

**Wednesday Morning.**

September 29, 9.30 o'clock.

1. The Safety Game as it is Played in One Plant.
  - a. The Man on the Job.  
Mike Corcoran, Kimberly-Clark Co.
  - b. The Foreman.  
Henry Bongers, Kimberly-Clark Co.
  - c. The General Superintendent.  
Earnest Mahler, Kimberly-Clark Co.
  - d. The Employment Secretary.  
Miss Mary Barker, Kimberly-Clark Co.
  - e. The Safety Director.  
M. G. Hoyman, Kimberly-Clarke Co.

**Thursday Morning.**

September 30, 9.30 o'clock.

1. Paper Mill Records.  
R. H. Guerrant, Safety Engineer, National Safety Council.
2. What is Being Done in the Pulp and Paper Industry to Bring Education Within the Reach of Every Employee.  
J. N. Stephenson, Editor, Canadian Pulp and Paper Magazine, Quebec, Canada.
3. The Economic Aspects of Safety Work and Kindred Efforts.  
H. T. Carruth, General Manager, Mead Paper and Pulp Co., Chillicothe, Ohio.

**SPAIN TO CANCEL DUTY ON PAPER.**

Import duties on news print paper and paper for books will be abolished by a royal decree which the Minister of Finance of Spain has decided to issue. The Minister expressed the opinion that the measure would have little influence on the price of paper, but said he consented to the experiment in order to meet the demands of publishers and authors.

To hear patiently and answer precisely are the great perfections of conversation.—Disraeli.

# Sweeping the Air and Water Out of Dryers on Paper Machines

By F. C. Farnsworth.

It is needless to say that air and water in dryers have been the cause of a loss of millions of dollars annually in paper mills, because the accumulation of air and water in dryers causes breakage of paper, cockling of paper and numerous other troubles which tend to prevent the maximum production of paper from a drying standpoint.

The accumulation of air and water in dryers has led to the installing of complicated and expensive steam control devices and hundreds of various types of steam traps and expensive experimental piping layouts for paper machines that are unnecessary with the Farnsworth method of heating paper machine dryers.

The Farnsworth method is simple engineering sense combined with simplicity in apparatus and piping and has been tried and found true in many of the large paper mills in the United States, Canada and Europe.

With the Farnsworth Differential System relieving the return line header, water and air in the dryer are forced through the syphon or buckets out into the return line header, because the steam in this return line header is utilized to heat a few dryers of the wet end section. Naturally we produce the desired reduction in pressure between the steam and return header necessary to force the water out of the dryer, or in other words, we might say that the dryer becomes a part of the steam line necessary to supply 25 per cent. of the dryers on the wet end of the paper machine.

The steam must pass from the main steam header through the dryers out through the syphon pipes or buckets into the main return line header through a

steam separator which separates the steam from the water; the steam is then passed over into the dryers of the wet end and at a reduced pressure and temperature.

A high velocity of steam pouring out of the syphon pipe into the main return line header carries with it all water and all air that would otherwise accumulate in the dryer, thus providing a high circulation of dry steam in the dryers. It is, however, understood that the steam must be condensed in the dryer to throw off the latent heat, but after it has been condensed it cannot possibly lie in the dryers with the Farnsworth system, as shown in Figure 1.

When the dryers are filled with steam naturally water accumulates in the bottom and must be lifted to the centre of the dryer so that it will flow into the return line header. It is well understood that more steam is used on the wet end of a paper machine than on the dry end. Hence the syphon pipe of the dryers on the wet end is required to handle more water than those on the dry end, with the common result that steam passes through the syphon pipes of the dryers on the dry end of the paper machine and out into the main return line header, building up a pressure of steam in the return line header which is practically equal to the steam pressure on the steam header.

With this condition there is no differential pressure between the steam header and the return header. It is, therefore, not possible for the water in the bottom of the dryer to rise through the syphon pipe which ranges anywhere from 15 to 30 inches in height; for

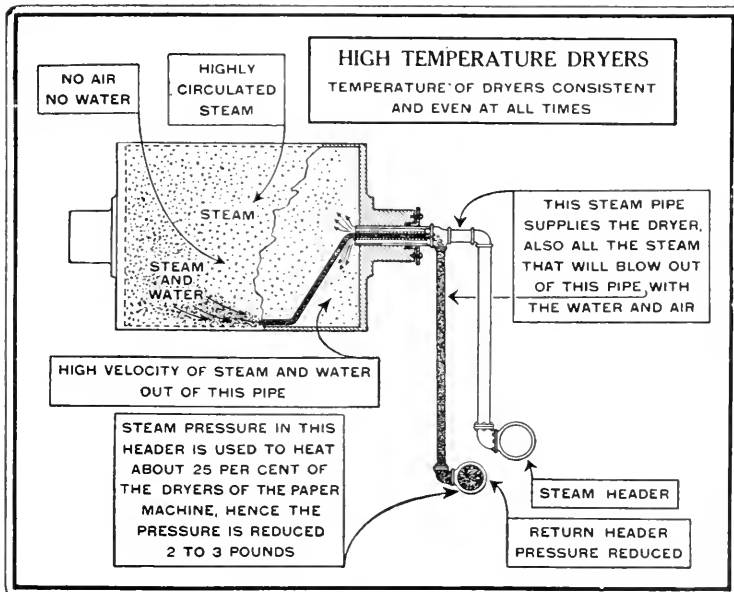


Fig. 1.

this reason, a difference of at least  $\frac{1}{2}$  a pound pressure is necessary to overcome a static head of the syphon pipe between the bottom of the dryer and the center of the trunnion.

Hence the water cannot be lifted out of the dryers without sufficient differential or reduction in pressure on the main return line header to cause the pressure in the dryers to force the water out of the syphon pipe against the static head. In other words, water cannot be syphoned out of the dryer when the same pressure is maintained on the return header, until the dryer first fills with water to the center and starts the syphon. Then only are the dryers entirely emptied, which causes the uneven drying conditions; these uneven conditions are verified by the uneven slugs of

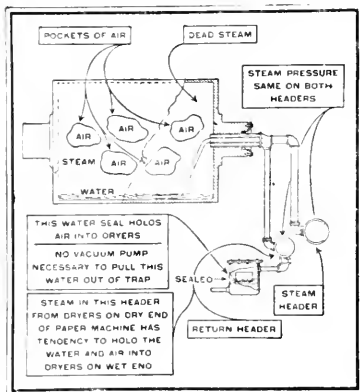


Fig. 2.

water coming from the paper machine which is drained by one or more traps connected to the one common return line header.

The cut, Figure 2, shows the old or the most common way of piping up dryers with a trap draining the main return line header. The water in this trap necessary to raise the float or bucket forms a seal and prevents getting out of the dryers of the paper machine any air excepting that which might leak out through defective packing or poorly packed stuffing boxes of the dryers.

With the piping and stuffing boxes tight as they should be, the seal of water in this trap draining the the header with the type of job shown in Figure 2, there surely will be sluggish conditions in the dryers for three reasons:

1. The steam stands dead because the only steam admitted into the dryers is that which is necessary to replace that what has been condensed.
2. No air can escape through the water seal in the trap, must go out through air vent in dryer head. (Ed.)
3. The water leaves the dryers in slugs as explained heretofore.

If the dryers are equipped with buckets instead of syphons and a trap of any type is used to drain the main return line i.e. header as shown in Figure 2, the air will remain in the dryers. This is due to the seal of water in the trap and also to the fact that water is not relieved freely from the dryers since, with the same pressure on the return line header as on the steam header, the water flows out of the dryer due to the static head only. There is no pressure difference to increase this velocity for the same reason

as explained heretofore, that the pressure on the return line header has been built up through the dryers on the dry end of the paper machine.

A dryer equipped with a small trap is shown in Figure 3. Note the seal of water in the trap necessary to lift the float or bucket. With this construction there is sure to be the same pressure on the syphon pipe up to the trap as is on the steam header. With the same pressure on each of these pipes it is quite impossible to get a free flow of water up through the syphon pipe, for the reason that water must accumulate in the bottom of the dryer until the end of the syphon pipe is sealed. Only when the pressure has reduced enough between the end of the syphon pipe and the trap to cause the proper differential, and with sufficient pressure on the dryer, can water be forced out of the dryer with this system.

It is absolutely impossible to get any air out of the dryers owing to the seal of water in the small trap. Furthermore, there is the disadvantage of maintenance of a number of small traps and the possibility of leakage of steam through these small traps.

Many paper mills are using a vacuum pump to drain the water from these small traps, while in the majority of cases the water would flow from the trap by gravity. Some paper mills have the opinion that the vacuum pump attached to the small traps effects a vacuum in the dryers. This could not be done because first of all, a vacuum pump will not pull a vacuum when any vapor is coming through, and secondly, the seal of water in the small trap to raise the float control to open the valve absolutely prevents any vacuum within the dryer; in other words, there is a tightly closed valve between the paper machine dryer and the vacuum pump, only opened as suf-

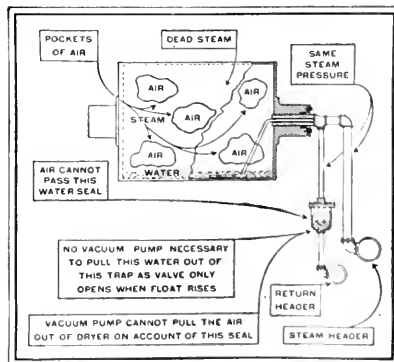


Fig. 3.

ficient water rises in the small trap to operate the float that opens the valve.

Furthermore, in most cases where a vacuum is used a cold water spray is used in the suction line to cool down the high temperature condensate discharged from the small traps. This condensing spray is what creates a vacuum in the majority of cases rather than the vacuum pump, and the enormous amount of cold water used cools down the condensate and causes a big waste of heat, thus a loss in fuel.

With the above mentioned system a higher back pressure on the engines, and some additional live steam is usually necessary to get the required temperature and yet does not produce the desired results.

### A PAPER CHASE, NOT A JOY-RIDE.

Describing the Imperial Press Conference as more of a paper-chase than a joy-ride, H. F. Gadsby, who writes satirical articles from Ottawa for the *Toronto Saturday Night*, thus relates some of his encounters with the delegates:

The latest and greatest bond of Empire, if I am to believe the Imperial Press Conference, also the strongest, would be of newsprint paper.

It was my good luck to fall in with an Irish journalist from London, and being Irish he had that in his bones which made him a frank critic of his fellows. The Irish newspaper man, I may say, is the saving leaven of the British press—if he can't get the truth out any other way he blurts it. When I met him on the Chateau terrace he was gazing hungrily at the Laurentian hills, bearded to the chin with goodly trees.

"Pulpwood?" he asked, jerking his thumb toward the blue horizon.

"No," I said. "Wooden legs. We can make more money out of 'em that way."

I remembered the last Imperial Press Conference some seven years ago, and the new lake that was formed in North Ontario when the visitors allowed their mouths to water at the sight of our spruce forests, so I hastened to steer my Irish friend away from the subject. But, alas, he would not be steered—his nose turned ever in the direction of newsprint.

"We have no mission," he explained, "except friendliness. We would develop your resources and our bank accounts. Our pilgrimage combines pleasure and pulpwood. If pleasure stands in our way we will let it go and take the pulpwood instead. I heard somebody the other day call this little excursion a joy ride. A joy ride it may be, but it is also a paper chase."

"Too late!" I sighed. "It's the tail of the hunt. You should have got here sooner. Three-quarters of the money in the Canadian pulp business is American. That's why we have got to go short ourselves."

"This," said my Irish friend, "must be remedied. You speak a great deal of the ties of Empire. You must translate your words into deeds and give us more newsprint. The solidarity of the Empire is in your hands—pulpwood. You have the greatest available supply in the world. The Lion and the Lion's Whelps cry for it—we must be fed."

My Irish friend was getting his metaphors mixed—you do not feed lions on pulpwood—but I could see his drift. Just a little while before a hard-bitten Australian had complained to me that four hundred and fifty dollars a ton for British Columbia newsprint laid down at Melbourne was a bit thick. (The \$450-a-ton paper came from Sweden not from British Columbia.)

"You have," continued my Irish friend, "the desire of our hearts, plenty of pulpwood and easy to get at. As citizens of the Empire you must admit that we should share this precious heritage in common, giving the outsiders only what is left. If you love the Empire you must supply the pulpwood out of which the edifice of inter-imperial good will is to be built. There is nothing," he added, "that will compare with your spruce as the raw material of newsprint paper. The colah boolah tree of Australia is not fibrous enough for the purpose, while the wamba-wamba tree of South Africa, which is little better, does not cohere sufficiently. You have the cream of the market and you're damned selfish about it."

"If you were real patriots now"—this with a twinkle in his eye—"if you really want to bring the Empire together, you would do something about it—produce a pulp tree, for example, that would grow about ten times as fast as the present sort does. It's the one thing that will save the Empire—Canadian pulpwood of commercial value at, say, two years' growth."

"We can do better than that," I challenged. "We can produce a print paper tree. All you'll have to do is to back your spindle into the bush and unwind the stuff like birch bark. To go a little further, we might have two kinds of paper trees—Liberal and Conservative—the sentiments being ingrained, as it were. This would save setting up in the office and would do away with a great deal of expense if we could get the Typographical Union to agree to it. The paper tree, tapped at the proper season, would also supply printers' ink, and thus solve another problem."

"You're spoofing me," said my Irish friend, and sure enough I was. Not having an English sense of humor he saw it at once.

"As a binder of Empire," I explained, "I yield to none, but I suppose you have a job printing end to your newspaper?"

"What has that to do with it?"

"Well, as a job printer, you ought to know that if you bind too tight the binding rips. I'm in favor of the loose leaf system—when you can slip 'em in and out."

"The disadvantage of that," commented my Irish friend, "is that once they slip out you can't slip 'em in again. They go blowing around."

"True!" I agreed sadly. "Look at the United States of America. They're blowing yet."

### FORESTS BETTER THAN FIFTY YEARS AGO.

If one were looking for evidence of what reforestation can accomplish in perpetuating the timber supplies against the drain of continued exploitation, he would probably be satisfied in going to Sweden, where, notwithstanding unabated encroachment on the timber, for commercial purposes, in their own manufactures and for export, the forests are in better condition today than they were fifty years ago.

In Sweden they have the greatest match factories in the world, and they are conspicuous in the manufacture of pulp and paper. They are also exporters of lumber to a very considerable extent. The forests being one of their greatest assets, they have given exceptional attention to their preservation and have developed a very intelligent and effective system of reforestation. Dr. W. E. Enright, of Westmount, Que., who has just returned from Scandinavia, observed that in one small province of Sweden alone twelve or thirteen times as many trees had been planted as in the whole of Canada. Anyone cutting timber in Sweden must replant the area cut over, this practice being required by law. The result is, that although Sweden cuts and exports a great amount of timber, the forests are not only preserved but are in better condition today than they have ever been since modern encroachments have been made upon them.

### BEVERIDGE IN OLD VIRGINIA.

James Beveridge, one of the best known authorities on alkaline processes, is now general manager of the Hummel-Ross Fibre Corporation, Hopewell, Va. This concern manufactures kraft pulp and paper.



# Technical Section



## REVIEW OF RECENT LITERATURE

**A-3.—The proximate compositions of Korean hemp and ramie.** Yoshiyuke Uyeda, Univ. of Cal., Berkeley, Cal., *J. Ind. & Eng. Chem.*, **12**, 573-6, (1920). The proximate compounds of Korean hemp and ramie were determined by modifications of the analytical methods proposed by Dore. (See *J. Ind. & Eng. Chem.*, **11**, 556, 1920) and were found to be:

Sample	Hemp	Ramie
Loss on drying	8.83%	10.50%
Benzene extract	1.92	0.86
Alcohol extract	1.20	0.75
Water-soluble	4.50	3.79
Soluble in 1% NaOH	18.53	17.27
Cellulose	62.42	65.88
Lignin	3.32	0.66

Total . . . . . 100.71 . . . . . 99.71

The analytical results are discussed from the textile chem. standpoint for the benefit of future investigations. —A. P.-C.

**A-3.—Possibilities of African grasses in paper manufacture.** Clarence J. West, Arthur D. Little, Inc. Paper, **10**, 28, (June 23, 1920). A condensed analysis of many grasses growing in Africa, summarizing their possibilities in the manufacture of paper, based on **Industries Bulletin Series**, No. 7, by C. F. Juritz, Agricultural Research Chemist of the Union of S. Africa. —A. P.-C.

**A-3.—New papermaking fibers.** Papier, **23**, 15-7, Jan. 1920. Notes on the early attempts to make pulp from pine-needles and on the advantages of this raw material, and on vine-shoots, Algerian mallow, and French colonial plants and trees as sources of pulp. —A. P.-C.

**A-3.—Ramie and textile nettles.** Ch. Grond, Papier, **23**, 73-6, (April 1920). Discussion of the possibility and advisability of utilizing native species and of introducing foreign species into France.—A. P.-C.

**A-5; D-0.—Decay of woodpulp.** A chemical investigation of sound and infected groundwood pulp. S. A. Mahood and D. E. Cable, Paper, **25**, 1149-50, 1920. Comparative analyses of sound and infected ground wood are given. The methods used were those of Schorger. *J. Ind. & Eng. Chem.*, **9**, 556, (1917), except in the case of lignin which was determined by the method of Ost and Wilkening (*Researches on Cellulose*, Cross & Bevan, Vol. III, (1905-10) p. 39). On an equal wt. basis the difference is small, the greatest being in cellulose and lignin contents; but the results do not show the loss of wood due to decay. Chemical composition of the pulp had apparently not progressed as far as the physical condition of the pulp might indicate.—A. P.-C.

**A 14; K-0.—Causes and action of dendritic growths in paper.** James Strachan, FRMS, Paper, **26**, 890, 891, 1920. The dendrite starts with a nucleus of bronze or brass embedded in a felted sheet of cellulose fibers containing other substances comprising paper. The nucleus is dissolved by H<sub>2</sub>SO<sub>4</sub> formed from Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>, etc., with formation of CuSO<sub>4</sub>. This creeps along the most cellulose fibers by capillary force.

The CuSO<sub>4</sub> is reduced to CuS by H and oxidizable matter. The CuS is reoxidized to CuSO<sub>4</sub> by atmospheric O, and thus by alternate oxidation and reduction insoluble. Cu compounds may be deposited along the fibers in the form of a dendritic growth containing CuS pseudomorphs with CuSO<sub>4</sub>. The final action in very old dendrites is oxidation resulting in the formation, with complete solution of the metallic nucleus, of a basic CuSO<sub>4</sub>. The dendrite may be tested for the presence of CuS by applying a drop of a solution of the double cyanide of K and Cd, containing a slight excess of KCN, the CuS going into solutions and CdS precipitating out.—A. P.-C.

**A-14. The Webb paper tester. A New instrument for testing corrugated fibre board.** J. D. Malcolmson, Mellon Institute of Industrial Research. *J. Ind. and Eng. Chem.*, **11**, 133-S, (1919). A comparison of the Mullen and Webb testers, tried out on several hundred samples of corrugated board, representing practically all the varieties known to the trade. The tests showed that the Webb tester is correctly designed and constructed from a mechanical point of view, and that it gives a more accurate measurement of the value of paper products (especially corrugated fibre board) than is possible by the use of the Mullen tester. In addition to the puncture test, the Webb machine may be used for tensile tests, elongation tests and compression tests. The tensile test, especially when "across the grain," is an important index of the value of a fibre box as a shipping container. This "across the grain" value may also be found more quickly by a puncture test, using a "wedge" plunger. The pocket-size model makes it possible to test corrugated boxes under conditions which are impossible at present. Besides corrugated products, the Webb machine can be used for testing many other flat substances, such as paper, cardboard, "solid fibre" board, gummed tape, fabrics, etc.—A.P.-C.

**B-4. A new textile fibre.** *Z angew. Chem.*, June 14, 1918; *J. Ind. and Eng. Chem.*, **11**, 244, (1919). A manufacturing company in Chemnitz has succeeded in producing a useful substitute for cotton and jute from pine tree needles. These needles are treated chemically and then prepared by machinery. The finished material can be spun on any cotton spinning machine. The spun yarn breaks less easily than paper yarn and is also more elastic. This company also manufactures a very serviceable watertight and pliable substitute for shoe leather.—A.P.-C.

**B-9.—The Alaskan forests.** W. B. Greeley, chief of Forest Service, Paper, **26**, 831-2, (1920). A description of the large timber resources of Alaska and of the advantages of establishing pulp and paper mills there. —A. P.-C.

**D-3, 4.—Cutting grinding power costs with pulp load regulator.** Paper, **26**, 111-2, (June 16, 1920). Brief description of the General Electric Regulator for maintaining a constant load on motor driven grinders. It consists of a torque motor, series transformer, and piston type balanced throttle valve, and is installed in the main water line to the grinder. —A. P.-C.



**D-4. Groundwood Pulp.** Factors influencing the quality and yield. Bois et Résineux; Papier, 23, 1-4, (Jan. 1920). Summary of results obtained at the F.P.L., Madison, Wis., in the course of various studies on groundwood. The various factors are: 1) sharpness of the stone; 2) pressure on the wood in the pockets; 3) velocity of the stone; 4) temperature during grinding; 5) condition of the wood; 6) variety of the wood. 1) The sharper the stone the greater the output and the coarser the fiber. 2) The greater the pressure the greater the power required to drive the grinder, the greater the output, the greater the yield per cord, and the less the power consumed per ton of pulp. Above 80 lb. per sq. in. the increase in yield and output is more than offset by the falling off in quality. 3) The output increases with increase in velocity. 4) High temperature gives a browner pulp. The relative advantages of cold and hot grinding have not been satisfactorily established. 5) Fast growing woods are more easily ground but give a coarser and weaker fiber than slower growing woods. Dry wood requires more power and gives higher colored pulp than green wood. If the wood is steamed previous to grinding, the lower the steam pressure, the higher the yield and the whiter the stock. 6) The advantages of the different varieties of spruce and pine are discussed.—A. P.-C.

**E-4.—What liquefied sulfur dioxide is.** Guy C. Howard, Makin' Paper; Paper, 25, 1164, (1920). A brief description of the method of preparing liquefied  $\text{SO}_2$  from smelter gases.—A. P.-C.

**F-4.—Electrolytic recovery of soda and by-products in the manufacture of pulp.** Fr. Patent No. 500,454, Société dite Cellulose et Papiers, France, Dec. 17, 1919, Papier, 23, 101-2, (May 1920). The NaOH is recovered by concentrating the liquor and passing an electro current through the solution. Na is amalgamated with the mercury cathode, while various organic compounds separate at the anode which is so constructed that these compounds may be removed and recovered without interrupting electrolysis. The electrodes are separated by a porous diaphragm. In the case of continuous cooking with a stabilized liquor, electrolysis is conducted concurrently with the cooking, and the cathode is of Fe or other suitable metal, so that the NaOH is not removed from the liquor. The organic compounds which separate at the anode are periodically removed. The loss of NaOH is only about one-third to one-half that by the usual process of recovery.—A. P.-C.

**G-11.—The theory of decantation applied to save-alls.** J. Rigaud-Morin, Ecole Française de Papeterie de Grenoble, Papeterie, 42, 482-91, (June 10 1920). A brief mathematical discussion of the theory of decantation showing that the movement of a particle of pulp in the save-all is the same as that of a projectile travelling in a medium the resistance of which is proportional to the speed of the projectile.—A. P.-C.

**H-1.—The rapid determination of hypochlorites.** L. Industrie Chimique; Papier, 23, 104-5, (May 1920). The chemical constitution of hypochlorites is briefly discussed to show that the general formula is  $\text{XOCl} + \text{XCl}$ , or  $\text{X}_2\text{OCl}_2$ . The Mueller apparatus for the determination of the available Cl evolved on treatment with  $\text{H}_2\text{O}_2$  is described, together with the mode of operation.—A. P.-C.

**K-4.—A new rag cleanser.** D.R.P. No. 314,569, class 55a, Oct. 20, 1918, Jos. Morsehe, Bocholt, Westphalia. Paper, 25 1164, (1920). The apparatus consists of a

conical centrifugal drum revolving within a casing and employing a current of air for the removal of the impurities.—A. P.-C.

**K-0.—The manufacture of paper in Japan.** Paper, 26, 836, 840, 846, (1920). A description of the various kinds of papers manufactured in Japan together with notes on the method of manufacturing some of them. A. P.-C.

**K-7.—Notes on the defibering of rags.** A. Noel, Papeterie, 42, 501, (June 10, 1920). The work must be done according to the nature of the rags and in such a manner that the fibers will be separated and gradually shortened, but not cut up, so that they may be properly beaten afterwards. It may be determined, if the cylinder is properly placed by putting a piece of sheet Zn over the bedplate and letting down the cylinder, thus showing if it bears on the whole surface of the bedplate.—A. P.-C.

**K-7.—Notes on the beating of pulp.** J. G. Varlot, Papermaking engineer, Bull. Synd. Fab. Papier et Carton, No. 3, 40-4, (Feb. 1, 1920). The quality of the beaten pulp depends entirely on the pressure of the cylinder per unit area of the working surface of the bedplate, irrespective of the number of knives of the latter which come in contact with those of the cylinder. Hence to obtain a given quality in a given time it is best to use a bedplate with as small a working surface as possible to reduce the power consumption; i.e., to increase the output per H.P. hr. For a 1200 kg. cylinder (about 60 kg. beater) the minimum working surface allowable is about 200 sq. cm.—A. P.-C.

**K-7.—Three-compartment beater.** Papier fab.; Papeterie, 42, 500, (June 10, 1920). The length of a beater of given width is limited owing to the inertia of the stock which slows down the speed of circulation. This can be overcome by building the beater in 3 compartments, with a propeller at each end, so that the stock is forced in one direction in the middle compartment and back in the 2 outside ones.—A. P.-C.

**K-12.—Kraft paper: its speed of manufacture.** Papier, 23, 90-1, (April 1920). Description of the treatment to which kraft pulp must be subjected and of a machine which can make kraft paper at the rate of 825-900 ft. per min., according to J. Corcoran, Dominion Engin'g Co. The pulp is passed through a shredder to break it up into pieces 6-7 cm. sq., and then through a Lannoye pulper. It is sent to a mixing tank with a propeller-shaped agitator at each end, and then to a beater to mix in the color. Suction rolls must be used instead of ordinary rolls, and the sheet must be carried automatically to the driers and calenders. A. P.-C.

**K-12.—Making and using felts.** E. N. Huyck, of E. C. Huyck & Sons, Paper, 11-5, 34, (June 23, 1920). A description of the difficulties the felt manufacturers must meet in keeping up with developments in machine design and high speeds, with suggestions for the care of felts and jackets.—A. P.-C.

**K-12.—Regulation of reducing valves to obtain uniform drying: the Arca regulator.** Paper, 26, 875-6, (1920). A description of the Arca regulator for automatic control of the pressure of the steam supply to the driers. Curves are given to show the performance of the regulator.—A. P.-C.

**K-12.—Practical training of the papermaker. How to become a machine tender.** E. Arnould, Papier, 23, 7-8, (Jan. 1920). A brief description of what the machine tender should know about the manufacture of paper.—A. P.-C.

### INSTALLATION OF NEW PAPER-MAKING MACHINES IN THE UNITED STATES.

Mr. Emmet H. Naylor, secretary of the Writing Paper Manufacturers' Association, has compiled the following data based on information received from all the principal paper machine manufacturing companies in this country relative to the installation and production of new machines in the paper industry in the United States.

Quoting from his conclusions: "If the present market demand is indicative of a new normal rate of increase in the consumption of paper, then in general there should not be an over-production due to these new machines. If, however, the paper consumption in

the country does not keep up to its current level, there will be an over-production. We are inclined to believe that the former conclusion may come nearer our future experience, namely, that in the paper industry in general the installation of these machines may not mean any over-production, as business in this country has grown rapidly in the last five years and as demand for paper to meet the increasing various uses should remain normally strong."

Even if the installation of these new machines should result in over-production, it would be only in specific cases and would result, at all events, in the relief of the present newsprint shortage, either directly, or by the utilization of these machines for the production of other grades.

#### Installation of New Paper Making Machines in the United States 1920-1921.

Grade:	— 1920 —		— 1921 —		— Total —	
	Number of Machines.	Capacity in 24 hours.	No. of Machines.	Capacity in 24 hours.	No. of Machines.	Capacity in 24 hours.
News	9	516	7	420	16	936
Book	13	515	7	268	20	783
Board	16	1,317	10	890	26	2,207
Wrapping	4	115	1	30	5	145
Writing	1	18	3	63	4	81
Tissue	11	210	5	70	16	280
Hanging	1	30	0	0	1	30
Roofing Felt	3	95	2	140	5	235
Blotting	0	0	1	40	1	40
Coating	1	25	0	0	1	25
Glassine	1	15	1	15	2	30
Greaseproof	1	25	0	0	1	25
Specialties	2	20	0	0	2	20
Total	63	2,901	37	1,936	100	4,837
Total width in inches	8,150		4,977		13,127	
Average width in inches	129		135		131	

TABLE No. 2.  
Actual Production.

Grade:	1899.	1904.	1909.	1914.	1919.	Capacity Increase	
						Annual Capacity of New Machines.	Based on 1919 Actual Production.
News	569,212	912,822	1,175,554	1,313,284	1,374,517	280,800	20.4
Book	304,459	454,937	677,927	921,183	914,823	234,900	25.7
Board	394,746	559,711	883,088	1,291,805	1,950,037	662,100	33.9
Wrapping	535,252	644,291	763,067	911,029	869,631	43,500	5.0
Writing	112,707	146,832	198,213	247,728	343,762	24,300	7.1
Tissue	28,406	43,925	77,745	115,401	155,400	84,000	54.1
Hanging	54,330	62,606	92,158	96,527	92,136	9,000	9.8
Roofing Felt	96,915	145,024	225,824	243,908	281,962	70,500	25.0
All Other	72,201	137,148	123,732	129,182	208,093	42,000	20.2
Total	2,168,228	3,106,696	4,216,708	5,270,017	6,190,361	1,451,100	23.4

### A NEW DAYLIGHT LAMP.


A new method of illumination, known as the Sherringham Light, under which colors may be examined and matched, is nearly similar to daylight, according to the London correspondent of the Journal of Industrial and Engineering Chemistry. It was demonstrated recently before the London Section of the Society of Chemical Industry, which was much impressed by its possibilities.

The basis of the light is an incandescent lamp, which contains its lower half a metal hemisphere which re-

flects the bulk of the rays upward against a large reflector on which there are concentric rings colored yellow, green and blue in proper proportions.

By a judicious selection of the colors in the reflector a light is obtained of which the spectrum is usually very similar to that of daylight, although the proportion of violet rays is somewhat less than is found in the rays from the sun. The reflection absorbs something like half of the light, but the system is considered as having great possibilities in certain directions.

# PULP AND PAPER NEWS



According to information received at the head office of the Spanish River Pulp and Paper Mills, Limited, in Toronto, the new machine being installed at the Sturgeon Falls mill will be ready to start operation about January 1st. Some delay has been experienced in securing electrical equipment, but good progress is being made now. This machine will increase the output of the mill by about 50 tons of newsprint each day. It is expected that the annual statement of the company will be ready in a couple of weeks. The annual meeting will be held in September.

Mr. J. E. Greaves, editor of the Paper Maker, London, and Mrs. Greaves spent the week end in Montreal on their way homeward. They stopped at Three Rivers and will sail from Quebec.

Shortage of white paper is now being felt in Ontario Government circles and the provincial King's Printer is deeply embarrassed. Blue books and reports galore, which are printed by the thousands and require hundreds of tons of paper, are being held up. So serious is the shortage that contracts are being ignored and orders have gone out that white paper must be secured from any possible source. Priority was given to the Statutes of Ontario for 1920, of which 7,500 copies are printed. Each copy contains 826 pages and comprises 167 statutes placed on the book during the last session of the Ontario Legislature. It weighs approximately four pounds, so that about 150 tons of white paper were necessary for these volumes alone. The Daily Warder and the Weekly Post of Lindsay, Ontario, will cease publication on September 1st and Lindsay will be served with one daily and one weekly in future, instead of two of each. The survivors are the evening Post, which is a daily and the Weekly Watchman-Warder. It has been announced that there has been no amalgamation, but an agreement between the publishers to drop the weekly edition of the Post and the Daily Warder. The reasons given for the dropping of the two papers are the big increase in the cost of newspaper production and the shortage and cost of newsprint.

Among the Empire press delegates who detached themselves from the party in order to investigate paper conditions in Canada was Thompson W. Leys of Auckland, New Zealand, who canvassed the Toronto paper dealers with a view to ascertaining the possibilities of Canadian paper shipments to his country.

The waste paper and rag stock business carried on by E. Pullan on Maud Street, Toronto, has been turned into a limited liability company with a capital stock of \$500,000.

The Canadian Baptist Bookroom, 233 Church Street, Toronto, has been taken over by the American Baptist Publication Society and the Society will in future conduct a book store and Sunday school supply business on the premises. The editor of the Canadian Baptist and his staff will retain their rooms on the ground floor as formally. The church officials are

left free to push the Canadian Baptist and the job printing department.

Announcement is made in Winnipeg of the incorporation of the Tribune Newspaper Company, with an authorized capital of \$1,000,000. The chief object of the new concern is to take over the business of the Tribune Publishing Co., Ltd., with a capital of half a million dollars. The Tribune was recently bought by the Southams, of Hamilton, owners of the Hamilton Spectator, the Ottawa Citizen, the Calgary Herald and the Edmonton Journal.

The Peterboro Weekly Chronicle, a new weekly paper, is to be launched in that city soon. The new company is being backed principally by labor subscriptions and T. Troons, M.P.P. is managing director. The first edition will be published about August 28th.

The name of the Lazier Paper Mills, Limited, has been changed by letters patent to that of the Belleville Paper Mills, Limited.

The Yarmouth Herald has just completed 87 years of publication, the paper having been established by the late A. Lawson on August 9th, 1833. It is the only paper in the Maritime Provinces that has been in existence that long, with one exception, and as far as can be ascertained is the only paper in the world that has been continued by father and son for so long a period.

The Riddell-Latchford timber enquiry will be resumed at Osgoode Hall next week when, it is understood, representatives of the Spanish River Lumber Co., will be heard. Hon. Howard Ferguson is at present busy preparing his reply to the charges that have been made against the conduct of his department under the old regime.

Premier Deury's plans, when carried out, promise to make of Kapuskasing a second Iroquois Falls. In the latter place the Abitibi Company owns the townsite and has brought into being a fine little modern town. It is the intention of the Ontario Government to make Kapuskasing a similar town. The Premier declined, in making the agreement with the Spruce Falls Pulp Company, to turn over control of the townsite. Government engineers will now lay out the townsite on modern lines and an ample supply of electrical power has already been provided for.

Mr. Henry C. Wilson, of Waterville, Kansas, who learned the printing trade on the Old Brooklyn Times in Ontario County, and who worked on the case in the Toronto Globe and the Colonist in Leader Lane some fifty years ago, was an interesting visitor to Toronto this week. He went to Kansas forty years ago and founded the Waterville Telegraph, of which he is still the proprietor.

Andrew D. Clarke, who for several months past has been editor of the Retail Merchants' Globe, has been promoted to be city editor of the Toronto Daily Globe. He is a well known newspaper man, having worked on all the Toronto morning papers and the London Advertiser, where he was news editor for about five years.

Mr. J. E. M. McAllister, of McAllister and Company, wholesale paper dealers, Winnipeg, was in Toronto this week calling on the paper trade.

The high prices for newsprint is sending subscription prices up. The Woodstock Sentinel Review has raised its rate from \$4 to \$7 a year; the Guelph Mercury and the Peterboro Examiner have each gone to \$6 a year; all Alberta newspapers are now charging \$8 a year by mail or \$13 delivered by carrier boy and the Victoria Times is now \$12 a year delivered.

The Department of Lands and Forests at Toronto have amalgamated the Woods and Forests Branch and the Forestry Branch, which latter branch took care of the fire ranging and matters pertaining to reforestation. The new organization has been placed under Mr. E. J. Zavitz, who is known as Provincial Forester. Mr. Zavitz is looking into questions relating to measurements, etc., with a view to introducing such improved methods as may be expedient in the public interest. Changes in the administration of the timber resources of the province are promised following the completion of the Royal Commission's enquiry.

Mr. C. F. Mansell, of the Toronto office of the Howard Smith Paper Company, has been re-appointed Grand Treasurer of the Sovereign Grand Priory of Canada, Knights Templar, which met recently in Calgary. Mr. Mansell has held office in the organization for many years and his appointment to the high office is looked upon as a tribute to his faithfulness and energy in the interests of the craft.

The Union Supply Co., Bridgewater, N.S., has bought a 7' x 40' barking drum, with conveyors and quill screens from the Western Engine Works Co. Our informant does not state whether this equipment is intended for the Nova Scotia Wood Pulp and Paper Co., Ltd., whose head office is at Bridgewater.

### OFFICERS OF THE KAMINISTIQUIA PULP & PAPER CO.

Following are the officers and directors of the Kaministiquia Pulp and Paper Co., which has commenced the construction of a pulp mill at Port Arthur.

V. M. Waite, President and Managing Director; Vice-President Reliance Mill & Trading Corporation, New York, N.Y.; General Manager Wolfe River Pulp & Paper Co., Limited.

A. E. Osler, A. E. Osler & Co., Investment Bankers, Toronto.

John Ball, President Reliance Mill & Trading Corporation, New York, N.Y., formerly Manager, Price Bros. & Co., Limited.

C. D. Howe, C. D. Howe & Co., Consulting Engineers, Port Arthur, Ont.

F. R. Graham, Graham, Sanson & Co., Investment Bankers, Toronto; Director, Western Canada Pulp & Paper Co., Limited.

Hon. T. W. McGarry, K.C., McGarry & Bird, Toronto, Director Acadia Sugar Refining Co., Limited, Halifax.

J. E. Regan, Toronto, Secretary-Treasurer.

### CANADIAN INDUSTRY IN STRONG POSITION.

It may be accepted without reserve that what has been accomplished in enlarging the export trade of Canada in this direction in recent years will be dwarfed by the accomplishment within the next five or ten years. Certainly no industry is better fortified by technical trade conditions than the Canadian pulp and paper industry, with its low costs of production and a market of unlimited possibilities such as lies at its door in the United States.

In the first revival of the industry, during the war period, trade authorities even in Canada looked askance at the possibilities of later competition from producing countries like Norway and Sweden. To-day the Canadian mills are selling newsprint on long-term contracts at \$100 a ton and making good profits, while the export price of the Scandinavian product, partly as a result of Europe's great shortage in supplies, but largely as a result of higher costs, has risen to over \$340 a ton.—Greenshield's Bulletin.

### DAMMING NIPISIGUIT FOR BATHURST

Grand Falls on the Nipisiguit River, are now being harnessed and Bathurst is destined to become "the town of cheap power", says the "Busy East." The work is being done for the Bathurst Lumber Company by Morrow and Beatty, Limited, contractors of Peterboro, Ontario. The present development consists of two units, turbine generators, of 4500 horse power each, while space is left for a third unit of 4500 H. P. to be developed should necessity arise in the future. The dam is approximately one hundred feet high. Work was started late last fall and will probably be completed before the end of the present year.

Necessary machinery and materials are carried to Grand Falls over the Northern New Brunswick and Seaboard Railway. The rails on this road were taken up during the war, but the Bathurst Lumber Company leased the roadbed and equipped it with sleepers and rails so as to expedite the power development scheme. At the present time The Bathurst Lumber Co., require in manufacturing about 2500 H. P. but when the contemplated paper mill is constructed a much large quantity of electric current will be required.

### SAW GRASS PULP MILLS FOR FLORIDA.

Many attempts have been made in the past to manufacture paper on a commercial scale from various raw materials besides wood pulp and cotton rags, says the "Daily Mill Stock Reporter". The increasing consumption of paper and the decreasing supply of pulp wood is focusing the attention of experimenters to redouble their efforts toward finding suitable new raw material or materials and developing processes for making paper from them. The latest announcement along this line is that of the organization of two companies, one in Florida to manufacture paper from the native saw grass and one in Texas to make paper from cotton linters.

The Leesburg, Fla., Commercial states that E. R. Lacey, after four years of experimenting, has succeeded in making a better grade of news print paper from the native Florida saw grass than is made of spruce wood pulp. So firmly convinced of success are the men who have been working on the project that a company is being organized under the name of the Grass Pulp & Paper Corporation, and the promoters are planning to establish the initial saw grass pulp mill in Florida within four months and to build altogether ten mills in various parts of the States. There are hundreds of thousands of acres of saw grass in Florida and it is understood that the company has enough raw material under its control to run many mills the size of the ten contemplated.



# UNITED STATES NOTES

The Mead Pulp and Paper Company of Dayton and Chillicothe, Ohio, which not so long ago increased its capital from \$1,000,000 to \$1,500,000, has added \$4,800,000 more to its capitalization. The amount of the latest increase was the largest granted by the Secretary of State of Ohio to a Dayton corporation during the present year. This expansion of capital was decided upon when the firm saw that its business and plant would have to be enlarged to meet the tremendous demand for better grades of paper. Details of mill construction are now being worked out for an additional magazine, lithograph, offset and book paper product plant at Chillicothe. A new 154-inch Four drier will be installed in this plant by the Pusey & Jones Company, of Wilmington, Del. The George H. Mead Paper Company of Dayton has been authorized to do business in Canada and has devoted a substantial sum to the development of trade in the Dominion. It is understood the headquarters of the firm will be in Toronto.

Officers representing seven allied wall paper companies in the New York and New Jersey district met at Glens Falls, N.Y., recently for their annual gathering. With the exception of Philip J. Riley, who was elected vice-president of the Plattsburg Wall Paper Company, Inc., and the Underwood Paper Mills to succeed the late Thomas R. Adrianec, the entire body of officers on the board was returned for another year. George Tait of Glens Falls was re-elected president of the board of officers of the allied companies. T. S. Marshall of Hackensack, N.J., and S. Carter Hall of Glens Falls were again chosen vice-presidents. An executive committee to meet monthly in New York was organized. This action was taken in view of the steadily growing business of each of the companies represented.

The Centennial Mills at Valatie, N.Y., successfully run for many years by Robert P. Richmond as a straw paper mill, has been sold by the latter to the Gibraltar Corrugated Paper Company of Brooklyn, N.Y., who will make immediate alterations and improvements for the purpose of producing nine point straw paper for corrugating. The deal was effected through the Gibbs-Brewer Company, paper and pulp mill brokers of New York, who within the past eight months has sold no fewer than four other paper plants located within the radius of several dozen miles near the Centennial Mill.

Forest fires have assumed serious proportions in northern California, the Pacific Northwest and parts of Montana. In Washington more than 500 men are fighting a fire which broke out early last week near Enumelaw, and another fire is menacing the main line of the Chicago, Milwaukee and St. Paul Railroad. Four large uncontrolled fires are burning on the Flathead National Forest in Montana.

Governor A. E. Smith of New York, has appointed Harry P. Gould, president and treasurer of the Gould Paper Company, Lyons Falls, N.Y., trustee of the College of Forestry, Syracuse University. Mr. Gould

succeeds the late Francis Hendricks. He is considered an expert in reforestation work. Besides operating the mill at Lyons Falls, Mr. Gould is also at the head of the Donnacona Paper Co., located at Donnacona, Canada.

Bids for the sale of 100,000,000 feet of pulp timber in Alaska have been opened, the successful bidder being the Alaska Pulp and Paper Co. of San Francisco, which submitted a bid of \$1 per 1,000 board feet for the better classes of the timber and 50 cents for the remainder. The timber is located in Southwestern Alaska, within the Tongass National Forest. In a recent report of the United States Forest Service it was estimated that there are about 70 billion board feet in spruce and western hemlock well suited for paper making in this region. Located in a comparatively narrow belt along some 1,200 miles of coast line, this source of supply has the advantage of deep water transportation to numerous mill sites for many of which water power is said to be available. The Forest Service estimates that the cut from this locality alone would insure a perpetual supply large enough to meet one-half of the present newsprint requirement of the United States.

Directors of the United Paperboard Company have decided to recommend to stockholders a proposal to retire \$1,000,000 preferred stock, leaving \$1,500,000 outstanding. This stock has already been purchased under sinking fund requirements. The company for the year ended May 28, showed net earnings, before depreciation, of \$1,350,056, while surplus, after fixed charge and depreciation, amounted to \$840,010. After payment of dividends final surplus for the year amounted to \$561,740. Net earnings after charges of \$840,010 for the fiscal year were equal to \$6.25 a share on the common stock after allowing for preferred dividends.

On the basis of a net profit of \$400,000 on the sale of 5,000 tons of bleached sulphite pulp, Chauncey B. Smith, has entered suit in the Supreme Court, Brooklyn, against Knapp and Baxter, dealers in paper and its products, to recover \$14,000, or 3½ per cent which he alleges the firm failed to pay him according to agreement. Mr. Smith claims that the company owes him the above amount as commission on the purchase during August of last year of 2,400 tons of bleached sulphite pulp from the Champion Fibre Company of Hamilton, Ohio, and 2,600 tons of similar material from the Riordon Sales Company of Montreal, Canada. From these 5,000 tons Knapp and Baxter cleared \$400,000 after paying all expenses. Mr. Smith's complaint avers. Mr. Smith was manager for the company at the time this transaction was made.

In a signed statement issued last week from the offices of the International Paper Company, New York, Philip T. Dodge, president of the corporation, denied reports to the effect that the International Paper Company was in any way associated with paper mill schemes and projects that are being widely exploited by Jason Rogers of the New York *Globe*.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, August 21.—Despite the prediction that prices of paper would remain stationary during August, the week saw an increase in one line—that of kraft—and the previous week marked a new price list for box board, which furnishes another illustration of the unwisdom of trying to size up the future accurately with respect to the trade. At the beginning of the month word went out from the mills that jobbers could pretty well rest assured that the prices then prevailing would govern during August. Mounting costs of manufacture, however, combined with ever-soaring prices for raw stock, have upset calculations at the mills and some lines have had to undergo further increases. Whatever new prices are fixed, however, they are only basic, and as sales are only made with the proviso that payment shall be made at prices prevailing at date of shipment, and the mills are sold up for weeks to come, jobbers and consumers have no guarantee as to what they will have to pay for their paper products. High price-levels for all classes of paper still prevail, and there is no indication of a downward trend in any line, although a leading Toronto pulpwood contractor advanced the opinion to the Pulp and Paper Magazine this week that the present slump in lumber and over-production of groundwood in Quebec and New Brunswick would eventually send both raw material and the finished product down. Among the paper manufacturers and jobbers, however, this view is not shared and no talk is heard in these circles of any coming slump. The mills are all tremendously busy and despite a quiet holiday period in the printing trade a very small proportion of the arrearages of orders has been overtaken. A great shortage of both chemical and mechanical pulp still exists and the paper manufacturers are up against high costs of all paper-making ingredients. No jobber can keep a normal stock of any line of paper in his warehouse and incoming shipments are sold before they leave the mill.

### Pulpwood

That there is a very large production of pulpwood amounting almost to over-production, is the impression gained by Mr. E. R. Heyland, of the Heyland-Thompson Lumber Co., Toronto, who has just returned from a trip to Quebec and New Brunswick, where he has been looking over the ground and studying the market. Mr. Heyland made the further statement that on account of the slump in the lumber market, the big production and the fact that men who have previously engaged in cutting logs are now cutting wood, the impression prevails through out the two provinces that the pulpwood market is due to break this winter. In his opinion prices will take a drop then, following which a new era of lower prices for pulp and paper will set in. In the meantime, any prices that one hears of today for groundwood cannot be taken as a criterion of what the prices will be in the winter, while the war situation, especially in the east, is reported to be very serious. "I am satisfied that there is going to be a big curtailment in general

manufacture in Canada," said Mr. Heyland, who added that personally he would not feel inclined to put a nickle into rough wood he had not already sold, in view of the present condition of things. For instance, in Quebec, he pointed out, 15,000 cords was the limit on any transaction the banks would finance. While considerable over-production is promised, it is stated that there is very little pulpwood for immediate delivery, most of the wood having been already shipped out. In Quebec, the mills are paying from \$18 to \$20 per cord for next years delivery, while rough, unpeeled wood is quoted at \$11 to \$12 for next season's delivery. The price for unpeeled in Ontario runs at \$11 to \$14. The production of poplar is away beyond the demand and is quoted at \$12.50 to \$13 at country points, while peeled spruce is quoted at \$17.50 to \$18, although some has been bought as low as \$16.

### Pulp.

The pulp situation remains unchanged with the market practically bare of anything except contract lots. Groundwood particularly is a scarce article and mills are having the greatest difficulty in getting supplies. Prevailing quotations are from \$150 to \$160 per ton. Neither in groundwood or chemical pulp has there been any loosening up in the market. Mills appear to be hanging on to what they have, and several of the grinders have been shut down recently, which will have a tendency to boost prices still further, according to some authorities. Bleached sulphite is selling at \$190 to \$200 and unbleached from \$175 to \$195.

### Kraft paper up.

The week saw another of several advances in the price of kraft during the past few months. Beginning this week the commodity which has been selling at 12c will carry an additional half a cent a pound, while kraft pulp is still quoted at \$140 to \$150. Kraft mills are still several months behind with their orders, and the demand is away beyond the ability of the manufacturers to meet.

### Newsprint.

The general trend of the newsprint market is upward and in the opinion of most mills and dealers the next quarter will see a rise proportionate to the increase made effective at the beginning of the present quarter, although it is stated that the price will be governed by the pulp situation. "If the pulp manufacturers bring their prices down you can look for lower priced newsprint," was the way one mill representative put it and he added that the rate would be correspondingly upward if pulp prices go up. There have been no changes in prices for spot lots of either roll or flat sheets during the week.

### Book Papers

The week saw no change in the book paper situation. None of the warehouses have adequate supplies despite the fact that there has been a slight falling off of sales. A feature in book paper manufacturing conditions is the changed situation in respect to labor problems. There has been a great need for more help at the mills for months past, but at the present time



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mills are receiving applications from men for work, and at lower than previously prevailing wages. As a result the mills are in a more independent position in this regard, and are able to make their choice of men, a thing they have been unable to do for many months past. According to one mill owner the changed situation is making for more efficiency and greater output.

#### Tissues and Toilets

The demand for tissues and toilets keeps up and no orders are being booked for quick delivery. In fact, the mills are several months behind with orders and are not anxious for new business. What is accepted, of course, is subject to price at date of shipment which may be two or three months from now. Great difficulty is being experienced in getting wood pulp, and there are rumors of one of the Ontario mills putting in a pulp-grinding plant of its own, although nothing definite has been announced concerning the project as yet. The recently announced price lists for tissues and toilets still prevail.

#### Wrapping Papers

In the wrapping paper branch of the trade the demand has not diminished any. More business for the dealers is available if they could get hold of the stock. The mills are away behind with their orders, however, and nothing like the tonnage required is coming through. The week saw no change in the price list.

#### NEW YORK MARKETS

New York, August 21.—(Special Correspondence). Inquiry for most kinds of paper is a little livelier, yet consumers as a general thing have not increased their buying to any material degree. Everybody seems firmly convinced that a higher market lies ahead. Dealers are devoting their best efforts to warning users of paper that they will undoubtedly have to pay higher figures in the fall, and are persuading them to place orders ahead. Then, when dealers are given orders, they experience much difficulty in finding mills that will book the business. Paper manufacturers in common have all the orders on file that they feel justified in accepting under present market uncertainties, and most of them are desirous of retaining such little surplus of output over the balance of the year as they have left so that they can be assured of meeting the obligations already shouldered.

There is a firm tone to prices in every corner of the trade. No one is cutting prices to effect sales; no one, in fact, finds it necessary to, and the tendency of values is distinctly upward. At the moment the

price position appears to be that of a calm before the storm. Prices are holding exceedingly strong, but are not advancing to any important extent excepting in cases where quick deliveries of goods are concerned. Then sellers can obtain almost any figure they see fit to ask, provided they are within reasonable bounds.

Spot lots of newsprint in standard rolls are selling at 11 to 12 cents per pound, while sheet news is worth in the neighborhood of 13 cents, with some sales reported at slightly higher levels. In a statement issued this week, President P. T. Dodge of the International Paper Company points out that the transportation system at present is seriously retarding the shipment of newsprint to publishers, and unless the matter is quickly remedied, he predicts that there will be many newspapers closing their doors. Mr. Dodge suggests as a remedy for this situation the altering of the Interstate Commerce Commission's priority rules relating to coal and wood cars to such an extent as to permit a more liberal transportation of newsprint. He states that there are more than 400 newspapers in the United States dependent upon the International Paper Company for their supply of paper and that they are now living on a "hand to mouth basis." He adds that there is no accumulation of paper, and that there is no immediate shortage of pulp wood for his company's mills, which have stocks of wood for several months ahead piled up along the railways with men waiting to load it, but with rolling stock needed to get it to the mills. Coal cars, he says, must be allocated to bring fuel to run the mills.

Fine papers are moving toward consumers in comparatively large volume. Demand hasn't the snap that was such a salient characteristic not long ago, but buyers are absorbing good amounts and mills are kept busy effecting shipments on back orders. Prices are firm, and a bond paper at 30 cents per pound is considered cheap today. Quotations on bonds range from about 22 cents all the way to 60 cents and even higher, while high-grade rag bonds are selling in some instances up to 70 and 75 cents per pound.

Book papers continue to represent the strongest single branch of the market. There is a decided scarcity of stock and manufacturers have virtually nothing to offer in the way of sizable tonnage for months to come. Prices rule firm at around 17 cents for machine finished book, 19 cents for supercalendered and from 21 cents upward for coated book papers. Wrappings and other coarse papers are quotably firm and are in consistently good demand. Buyers are depending largely on deliveries against old orders to fill most of their wants at the moment, but still are seeking

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Boards are firm in price at about \$115 for plain chip and \$125 for newsboard and are improving in demand daily. The paper box trade is taking on a distinctly livelier atmosphere, and box manufacturers are redoubling their efforts to secure board.

**GROUND WOOD.**—The intense demand for ground wood that prevailed up to a short while ago is lacking to a degree at present, but the fact remains that there is no mechanical wood pulp going abegging, nor are there signs that supplies are anywhere near ample to cover consumers' requirements over the rest of the year. Spot lots of ground wood are fetching high prices. Prime spruce pulp is readily selling at \$140 per ton at producing mills, and this price is being bettered in some cases. Transient buyers, generally, are in want of supplies. Grinders are occasioned much difficulty in getting timber transported from the woods to their plants, and this is hindering the production of pulp.

**CHEMICAL PULP.**—Chemical wood pulp, sulphite grades in particular, displays a very firm price undertone, and there is a comparatively large amount of business current, notwithstanding demand at the moment is not so keen as earlier in the year. This is but a logical condition when it is understood that most paper manufacturers are short of pulp over the balance of this year, but that owing to the season they are not immediately in need of very large supplies in addition to what they are receiving on contract. Whenever producers have sulphite to sell they do not have to expend much time or effort locating buyers, whether the pulp is for prompt or future delivery. Neither do they experience trouble in obtaining the prices wanted. Consumers are looking ahead to at least some extent, and are readily placing orders when discovering available supplies. Quotations are unchanged at about last reported levels.

**RAGS.** Business of moderate volume is passing in papermaking rags. Mills are buying in true summer fashion, that is, almost entirely against direct requirements, but with most paper mills operating at close to maximum today there is quite a wholesome need for rag stock. Dealers are bullishly inclined regarding values, and are generally unwilling to accept orders covering large tonnages for future delivery excepting at prices substantially above prevailing market levels.

This applies especially to roofing rags, which are at present quoted at a relatively low basis compared to other grades, and which dealers believe are due for a rise. No. 1 roofing is selling at 2.25 cents or a bit higher at shipping points. Old No. 1 whites of re-packed quality are worth 13 to 14 cents per pound, re-packed thirds and blue around 4.50 cents, No. 1 new white shirt cuttings 23 to 24 cents, fancy shirt cuttings 14 cents and No. 1 washables 11 cents.

Arrivals of foreign papermaking rags at New York this week included 3,191 bales from Rotterdam, 1,502 bales from Bordeaux, 5 bales from Hull, 84 bales from Glasgow and 23 bales from Manchester.

**PAPER STOCK.**—There is a steady demand for old papers and prices are tending upwards. Packers claim to be getting but a small percentage of the stock ordinarily collected and are using this line of argument in behalf of higher prices. Low grades are moving freely toward board mills at prices ranging around 2.40 cents New York for folded newspapers and 2.05 to 2.10 cents for No. 1 mixed papers. Old kraft paper is actively sought and is fetching prices close to the present market value of kraft wood pulp, consumers paying around 6 cents a pound at shipping points for No. 1 packing. Shavings are quotably firm and in steady call, with sales of No. 1 hard whites reported at better than 8.50 cents and of soft white shavings of No. 1 grade at 8 cents. Books and magazines are quotably steady at 3.25 to 3.50 cents at shipping points. Compared with other kinds of papermaking material, waste papers are in by far a more active market position at present than all others.

Receipts of foreign paper stock at New York this week included 116 bales from Manchester, 30 bales from Dublin and 40 bales from Glasgow.

**OLD ROPE AND BAGGING.**—There is little life to the bagging demand, important consumers being almost entirely out of the market, and those buyers who are looking for supplies are securing stock at much their own prices. No. 1 scrap is offered at 2.50 cents a pound and can be bought for less. Roofing bagging is available at 1.50 cents at shipping points, and is little wanted. Old rope is moving in fair amounts at a quotable basis of 6.25 to 6.50 cents for No. 1 manilla rope.

Foreign arrivals at New York during the current week include the following: Bagging, 116 bales from Liverpool and 381 bales from Manchester; rope, 722 coils from Hull, 113 bales from Manchester, and 84 bales from Rotterdam.

# P. A. P. A.

## SCREEN

Pulp and Paper Mill Accessories, Limited  
MONTREAL, Canada

**THE MARKET FOR CHEMICALS AND FEEDS.**

The Pulp and Paper Magazine begins in this issue a regular report on conditions in the market for chemicals and feeds. The former applies to materials for both pulp and paper mills and the latter to supplies which at this season are being collected for logging camps and company stables.

**Chemical Market**

**HEAVY CHEMICALS.**—Sulphuric acid. This market is fairly supplied, but there are indications of slight upward tendency.

**ALUM.**—Owing to failure in the supply of bauxite as a result of transportation and labor conditions, manufacturers in the United States have not been able to get raw material and only contracted obligations are being attended to, and these only in proportion to the supply in sight.

**SODA ASH.**—The Canadian market has been practically sold up. The small margin has now been taken up by some mills substituting nitro cake for salt cake and using soda ash to neutralize.

**BLEACHING POWDER.** Lack of movement of raw salt due to labor and transportation conditions is a strong feature in control of this situation. Lime and steel for drums, are also held up for the same reason.

**SALT CAKE.**—The same observations with reference to the movement of raw material affects salt cake and all contracts are being handled in proportion to the supply available.

**NITRE CAKE:**—There is little of this material available from Canadian sources, the product, which is a by-product, being well cared for by existing contracts.

Quotations on all of these products are more or less of a spot nature, and therefore, are not given as they are subject to considerable fluctuation due to the conditions outlined.

**Feed Market.**

Conditions in this market, are dependent more or less upon the possibility of a war scare. If the case of war should arise the conditions with reference to feeds of all kinds would be very much worse than that in 1914 as there is at the present time a very pronounced shortage. Apart from this possibility we would make the following observations:

**ALFALFA.**—Material lowering of present prices may be expected.

**HAY.**—The present situation is affected more or less by the supply of cars and the market is now at about its low level.

**BRAN.**—Bran is largely influenced by the wheat situation and it is advocated that purchasers only supply immediate needs.

**OATS AND CORN.**—These two are governed by very much the same conditions, and lower prices are probable, except in the case of war as mentioned above. Generally supplies to cover immediate needs only are advisable with the exception possibly of hay that will not likely run any lower.

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# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., Sept. 2nd, 1920.

No. 36

## TABLE OF CONTENTS

### Editorial:

- In a fool's paradise ..... 913  
Cobwebs ..... 914

### Special Articles:

- Sectionalized paper machine arrives ..... 915  
Improved process for the manufacture of  
  esparto pulp ..... 917  
Timber restrictions justified ..... 919  
Technical Section (abstracts) ..... 925  
Pulp and paper news ..... 928  
Laurentide Co. in match concern ..... 929  
Scotch forester in Canada ..... 929

### Miscellaneous Information:

- Paper directories in demand ..... 916  
Technical questions ..... 918  
Examination of china clay ..... 921  
Tank cars for liquid sulphur dioxide ..... 922  
The spitting habit ..... 929  
Poland's paper industry ..... 935  
Your value ..... 935

### News of the Industry:

- In Hawaii ..... 921  
International anticipates trouble ..... 922  
Manonau Pulp and Paper organization ..... 922  
F. T. C. on U. S. newsprint for July ..... 923  
British trade news ..... 924  
United States notes ..... 925

### The Markets:

- Canadian trade conditions ..... 930  
New York markets ..... 932



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# EDITORIAL



## *IN A FOOL'S PARADISE.*

The first crops of wheat that were raised on the American prairies aroused the wonder and admiration of the settlers. Year after year the grain was planted in the same soil and crops were taken off without thought of the impoverishment of the land. But crops gradually and consistently dwindled until the return per acre has dropped to a point far below the quantity produced by the soil of other countries which is fed with proper fertilizer. American farmers have come to appreciate the folly of expecting a return without making an investment, and the use of fertilizer and rotation of crops are now important features of prairie farming.

The same prodigal manner of using the forest may be traced to the same misconceived notion that there was no limit to the resources of the country. The folly of considering the forest as an inexhaustible mine is now being painfully brought home to those who have not properly appreciated this natural heritage in the past. There are still those abroad who talk of millions of acres and billions of cords having only in mind what is really a very hazy and probably inaccurate estimate of total forest. The question of accessibility is seldom mentioned but total timber stands are referred to in terms of present requirements and the total capital stock is divided up on a basis of present annual consumption. Proper provision for the replacement of the timber is seldom referred to and when it is referred to it is frequently mentioned in terms that are no way near as adequate as recent careful investigations would suggest.

An authority recently intimated the necessity of going into the sub-arctic zone for the stunted, ancient growth which is scattered like the scraggley beard of an old man over the face of the desolate country north of the height of land. No doubt there will come a time when it will be necessary to construct transportation facilities at enormous expense and maintain logging and wood preparation plants under extremely serious difficulties for getting out that raw material for shipment to present pulp and paper mills. The establishment of complete manufacturing plants in such places may be lightly proposed but to build up and maintain a community so far from the centres of consumption and sources of many raw materials seems to us a serious mistake even in contemplation.

Why cut bean poles and tooth picks from the frozen

bogs of the Arctic regions and get possibly a couple of cords per acre of wood which is so small that much extra work and waste is entailed in its conversion, when, with a little courage and foresight it is possible to provide better and cheaper timber for the future by applying proper forestry methods for areas convenient to our present excellent mill centres?

The natural answer to this question, that is, why such things are seriously thought of, is that many of the present manufacturers and users of paper are considering only the present. There is no doubt but that there are large areas of forest lands easily accessible to present mills and to mills which might be established convenient to centres of consumption and also in the region of cheap wood and water power. Many people are looking only for the conversion of what is most easily available into the greatest number of dollars in the quickest possible time. Of course, a profit is taken off at each step from the forest to the finished product, whether the product be a paper bag, a newspaper, magazine or a shipping case. One of the principal factors limiting the quantity of these products that can be made is the difficulty of getting sufficient raw material and equipment to convert the tree into the product greatest in demand. The newspaper publisher could make millions of dollars if he could get all the paper he wanted to print the advertisements in are thrust upon him. The paper mills could also add greatly to their profits if they had more digesters, grinders and paper machines and could cut and transport logs fast enough to feed these hungry machines. To satisfy this present inordinate demand and a demand which shows promise of being maintained for some time will require a constantly increasing drain on our forests. This can be met at present without any very great increase in costs by continuing to strip the best available areas in the quickest, cheapest and most destructive manner. The question is, are we going to endanger the future economic stability of our country by exploiting the present world's demand upon our forests which are the backbone of our economic structure without due thought of what is to come? Will the newspapers continue to demand such a quantity of paper at such a price as will require the manufacturer to cut the vine off at the root?

No patriotic citizen will, for a moment, countenance such an attitude if due thought is given to the matter, yet many are living in a Fool's Paradise, the little spot

which is so sheltered from the outside that only the warm rays of the sun directly overhead are thought of while clouds that may hover ominously on the horizon are shut out from view and consequently receive no attention.

Canadian business based on the forest; pulp, paper, lumber and other wood using industries, are enjoying the warmth of a world demand for more product than can possibly be produced with present equipment and the cry is for greater production at a minimum price and a maximum profit. To meet these conditions it means an absolutely certain increase in cost of wood water power, and the destruction of our forest not only means an absolute certain increase in cost of wood but also endangers, according to present methods of lumbering, the existence of remaining wood lands and even the very life of the river which is the other great factor in Canada's domination in the wood pulp and paper industry. We can go on and produce paper in quantities sufficient to meet present demands and at a reasonably low price but we shall surely be absorbing our great bank account and when that is gone, as it most certainly will go, the nation will be well on the way to industrial bankruptcy. We cannot afford, and we should not dare, to progress blindly any further along the road of the easiest immediate profit regardless of the future.

The burden is not altogether one for the paper manufacturer to assume nor is the responsibility entirely his. The public, and particularly the publisher, must assume their share of the responsibility. The paper maker must always be governed largely by the demand made upon him and his establishment. The Government of each province holds the balance of power and can determine what shall be done but the Government reflects only the wishes of the majority and cannot act very much in advance of the public sentiment upon which it depends for support. Public sentiment is largely a matter of education and education of the public should be the principal concern of the newspaper. The publisher then can take his choice either plenty of paper at a comparatively cheap price for a limited time or urge and demand proper administration of the forests now that he may be assured of a sufficient supply for all time to come. Our Governments need have no fear whatever of placing the Canadian industry in a disadvantageous position in comparison with other pulp and paper producing countries because of instituting measures of forest utilization and production that will necessitate a temporarily increased cost of forest products. Even a temporary limiting of production, because of instituting proper methods, may confidently be made in the knowledge that the future will bring an even greater reward. It will be much better to know that we have just so much to use and then use it accordingly than to continue with the assumption that we have unlimited supplies

and can waste as we will. The idea of continuing to draw cheques on an unknown and constantly diminishing bank account is ridiculous and that is what our present forest policy amounts to. Our governments are gaining in courage and in vision and we may soon expect that there will be inaugurated in Canada a forest policy which will not only insure the life and prosperity of our pulp and paper mills and the communities depending upon them but also will ensure the publishers of this continent and the Empire sufficient newsprint paper for their legitimate needs for all time.

One of the serious difficulties in the matter is that the publishers have seen the forest as a sort of mirage (we inadvertently used an apt expression; the forest is receding), the reflection of rosy descriptions, made largely for political or promotion purposes. Editors and publishers should sit down with foresters and Ministers of Lands and agree to agitate, demand and support, a forest policy that will put the wood using industries of all the provinces on the same basis. We have preserved the forest to Canadian industry. Shall we now sit idly by and see it dissipated? We are in a forest paradise if we use it right. It is a Fool's Paradise if we have not the sense to eat the fruit of the tree of knowledge which is before us, yes, even peeled, sliced and put on our plate.

---

#### COBWEBS.

"Eagle A" Unity changed its name to "Eagle A" Outing for one issue in commemoration of the big picnic of the American Writing Paper Co. It must have been quite a party. We must thank the artist for several laughs at our friends in Holyoke.

---

The Department of the Interior at Ottawa is in a position to supply some excellent maps, showing the location of Canada's natural resources, lands available for settlement, etc.

---

We notice the Howard Smith Paper Mills "Story of a Sulphite Bond" reproduced in Martin's Papyrus. It's a good story.

---

We understand that the Cushman Paper Co. at Augusta, Me., is going to put in concrete foundation. A new mill on such a basis will lack some of the fascinating features of the old structure.

---

We are glad to welcome our friend W. G. Mac Naughton to the Dominion. He will find it a fine country to live in and full of good people. Kapuskasing is hardly a metropolis as yet, but Mr. Mac Naughton will be able to see and help it grow.

---

A train bandit has been located near Pincher Station, out West somewhere. Wasn't he a proper, particular fellow, to pick out such an appropriate place?



# Sectionalized Paper Machine Drive

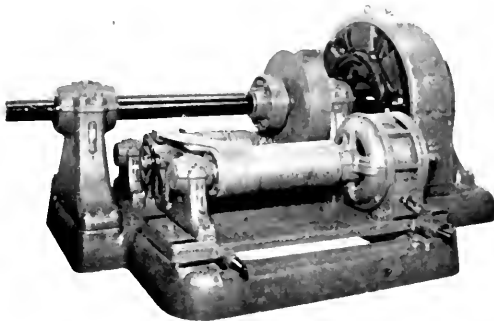
By W. W. CRONKHITE, General Electric Co.

The electrical operation of paper machines during the past has been practically confined to the use of a single unit either belted or direct connected to the variable speed line shaft, the speed range being obtained by a combination of voltage and field control on the motor, which was driven from a generator, usually belted to the constant speed shaft or direct to the steam engine driving the constant speed shaft. Where steam engines were not used this generator formed a part of a synchronous motor set, which was operated from the mill circuit.

With this type of equipment a line shaft is necessary, the various sections of the paper machine being driven from it through pairs of cones, which permit of the necessary draw between the sections.

Sectionalized drive has not been used, possibly because the trade has not demanded it and the speeds at which the paper machines have run has not made it necessary.

The demand for high speed paper machines and the difficulty of using a mechanical drive have focused attention on the sectionalized drive and made it prac-



A Driving Unit, showing Intake Shaft, D. C. Motor, Synchronous Motor, and Cone Pulleys for changing draw.

tically necessary to meet the demands of the trade. Other features which feature the sectionalized drive are the elimination of the line shafts and belting and the saving of space. It is particularly adaptable to mills where the paper machine is on the ground floor and although such a drive will eliminate the necessity for a basement in the mill, this is not considered an advantage by all paper manufacturers.

There are several types of sectionalized drive on the market, all of which, with the exception of the General Electric drive, have some form of speed governor which cannot act until a change in speed has actually taken place, in other words, something must happen before it can be corrected and there is a possibility of breaking the sheet before the governor functions.

The General Electric Sectionalized Drive is entirely different, since it prevents a change in speed from taking place and consequently it does not have to correct it.

This drive consists of one unit for each section of

the paper machine. Each unit consists of a direct current motor and a synchronous motor of about 20 per cent. of the capacity of the direct current motor, the synchronous motor being driven from the direct current motor through a gear reduction and a set of small cones.

The motors and cones are mounted on a common base and direct connected to the section of the paper machine.

All of the motor units are driven for a single generator, on which the voltage is varied by means of field control to obtain a variation in speed on the paper machine. For ranges in speed not exceeding a 6 to 1 ratio field control on the motors is not necessary, but beyond this range a combination of voltage and field control is necessary to insure good speed regulation.

All direct current units are operated in multiple from the generator bus.

All synchronous motors are connected to a dead bus.

All direct current motor fields and synchronous motor fields, also the generator field, are connected to the exciter bus which is of sufficient capacity to excite all machines.

Each direct current motor has a drum controller and rheostat in its circuit for individual starting, the last point of this controller being in the auxiliary circuit of the contactor which connects the synchronous motor to the dead bus. The actual closing of this contactor is by means of a push button but it can only be done when the controller is on the last point.

The control of this equipment is very simple and similar to the standard paper machine drive of the past.

The auxiliary control panel which controls the speed of the entire paper machine as a unit consists of a small panel on which is mounted:

1—speed indicator.

1—9" rheostat hand wheel.

1—push button station for start and stop duty.

In addition to the above control there will be a small indicating panel for each section.

When starting the paper machine as a unit the drum controllers in the D. C. motor circuits should all be on the last point with the synchronous motors connected to the dead bus. The start button on the auxiliary control panel will close the line contactor on the motor generator panel and apply a low voltage to all of the D. C. motors and turn them over at a slow speed. The synchronous motors being geared and belted to the D. C. motors will also turn over with them and since they are all connected to the same bus they will start up in synchronism.

To bring the machine up to speed the generator field is strengthened by turning the hand wheel on the auxiliary control panel.

To make paper successfully the relative speed of the various sections must not change, i.e., the motors must be synchronized and free from any individual change in speed. This is the function of the synchronous motors and within their capacity they will absolutely hold the D. C. motors in step. The speeds of the different sections of the paper machine are not all the same as there is a slight increase from

the wet end to the dry end, and this percentage difference may vary slightly for different grades of paper and under different operating conditions. This variation is called "draw" and is taken care of by shifting the belt on the cones, a procedure which can only change the D. C. motor speed since the synchronous motor speed is fixed.

Under actual operation any change in the load on a particular section, caused by changing the weights or otherwise altering conditions, will be absorbed by the synchronous machine. If the load increases it will act as a motor to aid the D. C. motor on that particular section and draw its power from the remaining synchronous machines which will immediately act as generators and distribute the load over the entire machine drive. If the load decreases it will act as a generator and supply power to the remaining synchronous machines which then act as motors. Any change in load on any section is therefore distributed over the whole motor equipment, and may change the speed of the paper machine as a whole but cannot cause any change in the relative speeds of the various sections.

So long as any synchronous machine operates within its capacity, either as a motor or as a generator, it will not be necessary to make any adjustments, but if the indicating wattmeter in the synchronous machine circuit shows too much power it may be easily brought back to zero by turning the rheostat in the D. C. motor field.

The equipment described above is what is termed hand control but this term applies to the sectional panels and not to the main control panel since all adjustments of power and transfer of energy between the direct current motors and their corresponding synchronous motors is accomplished by hand. It is not considered essential to make this adjustment automatic as the indicating wattmeter in the synchronous motor plainly shows whether the synchronous motor is acting as a motor or a generator and how much power it is delivering and so long as it is operating within the prescribed limits no adjustments are necessary.

However, the automatic feature is readily obtainable by the addition of a motor operated field rheostat for the direct current motor which is actuated by a contact making wattmeter in the synchronous motor line. This consists of an enclosing case containing the motor operated rheostat, a contact making wattmeter and the relay for operating the rheostat motor.

The so called automatic control has all of the features of the hand control if it is desirable so to operate.

This method of drive by actual test will maintain much closer relations between sections than is possible with the Marshall Train or any other known drive. This drive has been tested and with a 50 per cent. change in load on any section of the paper machine, the speed change on that particular section has been less than can be measured with any ordinary method of testing. The sectionalized drive was created to meet the demand for high speed on the large paper machines and it is not expected that the single motor type of drive will be entirely supplanted where operating conditions of the paper machines make it "good engineering" to use the older type of electric drive.

There is a big difference between I deal.

### PAPER DIRECTORIES IN DEMAND.

Marchant, Singer & Co., 47 St. Mary Axe, London, E.C. 3, advise that the 1920 edition of their Directory of Paper Makers of the United Kingdom is already entirely sold out. They have, however, a few copies left of the 1919 edition, which they will mail, post free, at 75 cents each.

A more extensive volume is the Paper Makers' Directory of all Nations, 1920 edition, published by Dean & Son, Ltd., 160A, Fleet Street, London, E.C. 4. The price is \$5, post paid. A performance that has 28 encores can be considered a success, which is surely the case with this directory.

The information is very comprehensive and very conveniently arranged for the frequent reference that would be made to the book by many paper makers, dealers and consumers. To quote from the Editor's Preface:

"The universally increased demand for Paper Products of all kinds, and the consequent world-wide shortage, have had the natural result of again raising to a high level, prices which, during last year, had appreciably fallen; and in view of the high price of raw materials and coal, increase of wages, and enhanced cost of production generally, added to the shorter number of hours worked, it is difficult to see how any immediate amelioration in market rates can be looked for.

Although the last edition of this Directory was issued only a few days after the signing of the Treaty of Peace with Germany, the Mill entries were nevertheless all re-grouped therein under their new geographical positions provided for by the Treaty; and it is believed that even now to-day, this is the sole attempt made up to the present time to show them in their proper territorial arrangement as affecting Austria, Belgium, Czecho-Slovakia, Estonia, Fiume, France, Germany, Hungary, Lithuania, Latvia, Poland, Russia, Ukraine, Yugo-Slavia, etc.

In the list of "Principal Wholesale Stationers and Paper Merchants, etc." of the United Kingdom, an innovation has this year been made by the addition of (N) after the names of those firms in both Town and Country, that at the time of going to press are Members of the recently constituted National Association of Wholesale Stationers' and Paper Merchants.

The names of Advertisers given in the work, have been specially brought together to form a **Buyers' Guide** under the heading of "Classified Index to Commercial Prospectuses" on pages xiii to xxxviii (which includes many firms on this side. Ed.)

Set out entirely alphabetically and arranged in three main sections, this book records, full details regarding the Paper, Pulp, and Board Mills of the World—the first part dealing with those in the United Kingdom, the second with those in the Colonies and Abroad, and the third giving a comprehensive list of Mill Productions in one list of some 400 Trade designations, classified according to Class of Goods manufactured, Country of origin, and Name of Firm.

Many requests are being received at the New York State College of Forestry for identification and control of injurious forest insects, which work havoc with trees. Much more definite information can be given and in many cases time saved if all such letters would not only give as complete a description of the nature of the injury as possible, but be accompanied by specimens of the insects and where possible, of their work.

# Improved Process for the Manufacture of Esparto Pulp

(Translated for the Pulp and Paper Magazine from *La Revue Universelle de la Papeterie et de l'Imprimerie*, 3, Jan. 15, 1920, p. 9, by A. P.-C.)

The following is a discussion of French patent No. 118,376 covering an improvement on the so-called English process of preparing esparto pulp, furnished by the patentee. It is presented to readers of the Pulp and Paper Magazine for its value in connection with the use of flax and cereal straws.

The patent covers the cutting and defibering of the raw grass, either by grinding or by some other appropriate method of trituration, before cooking it with alkali. This profoundly modifies the subsequent handling of the pulp and the results obtained by the older process. The improvement and advantages of the new process are so great that the problem of obtaining bleached esparto pulp at the same price as bleached chemical woodpulp is solved at last.

To furnish means for comparing the results obtained by the two processes, says the author, I shall first briefly review the results obtained by the so-called English process:

With a good grade of esparto grass containing 54 to 56 p.e. of cellulose, a yield of 36 to 38 p.e. of pulp could be obtained. I have run numerous yield tests on several tons of the usual grade of esparto, and have never been able to obtain any higher results. Some claim they can obtain yields of 40 to 42 p.e. of bone-dry pulp, and I am quite willing to accept these figures, though they must be regarded as extreme maximum values which would very seldom be attained.

1.) Yield of bleached bone-dry pulp—40 to 42 p.e.

2.) The pulp can hardly be considered as anything but an excellent filler. It is indeed very soft and very free, but its strength is practically all gone owing to the very drastic treatment to which it has been subjected.

3.) With these reservations, it must be admitted that it possesses valuable properties—suppleness, opacity, fineness, inertia and bulk. It feels admirably, as do all fine, smooth fibers, and is valuable in the manufacture of moderately high-priced fine papers and for certain specialties known as esparto papers.

4.) The cost of production was 38 to 40 francs per 100 kilos in prewar days; and it was very difficult to buy even small quantities at 45 francs.

5.) Its worst defect lies in its tendency to form into humps on the machine. This tendency is increased by a more severe cooking or by improper adjustment of the parts of the machine.

6.) When mixed with other stock, esparto pulp will not stand a very stiff brush, and to avoid fuzzing at the dry presses a furnish containing 30 to 40 p.e. of esparto must be subjected to a prolonged beating.

7.) Owing to its very high cost, esparto pulp is used only for very fine papers by French manufacturers.

8.) The manufacture of the bleached pulp must be carried out to perfection. This pulp is in a class by itself, and any fault in its preparation renders it worthless.

9.) The grass consists of two distinct parts, that near the roots which is hard, tough, and highly lignified, and the upper portion which is much softer and less lignified. On account of the harder portions, a large

amount of caustic soda must be used, about 12 to 15 p.e. of the weight of the raw grass.

10.) When the cooking is finished the spent liquor is black as ink, and the stock has a persistent yellowish tinge, so that even with 12 to 14 p.e. of bleaching powder the stock acquires only a dull white colour, which is very characteristic.

11.) So drastic is the cooking required to reduce the harder portions of the stalks that part of the more tender portions is "burnt" and is carried off either during the 3 or 4 hours' washing which follows the cooking, or during the beating.

12.) The cost of producing this pulp is about 7 to 8 francs higher than for chemical woodpulp, so that it could be used only for medium and high-priced papers.

This summarizes in a few words the qualities and faults of esparto pulp as it has been produced till now and explains why its manufacture is not as extended as it might and should be.

Let us now consider the results obtained by the new process.

But first, let me say that the process has been tried on a commercial scale, and that I shall be only too willing to submit samples to interested parties.

1.) The esparto is first cut small, and then ground under water, or crushed, until all parts, both hard and soft, have been disintegrated.

2.) The resultant mass is given a thorough washing to get rid of the sludge (and part of the chlorophyll), which I should estimate at about 20 p.e. of the incrusting matter of the grass.

3.) The pulp is drained, and is then ready to be charged into the digesters. Owing to the preliminary grinding to which it has been subjected, the material offers a greatly increased surface to the action of the cooking liquor. As a result the latter works much more easily and evenly, and the incrusting matter can be removed with 5 p.e. of caustic soda (based on the weight of the raw grass).

4.) The cooking is conducted in the usual manner, and after dumping the stock from the digester it is given one washing to recover the excess of soda. It is then sent to the bleachers where it is first thoroughly washed, and then bleached with about 6 p.e. of bleaching powder. The pulp thus obtained is beautifully white.

5.) It should be noted that this treatment is in accordance with the known and approved principle for treating wood, waste cordage, hard rags, etc. The various parts of the esparto have been evenly acted upon by the cooking and bleaching liquors, and there is no reason for thinking that any portion of the cellulose has been affected differently from any other portion.

6.) The yield of bone-dry pulp easily comes up to 50 p.e. of the weight of the raw grass.

7.) The stock consists of practically pure cellulose and is very white. It has longer fibers and possesses all the good points of the pulp made by the older process, and moreover it has no tendency to form lumps on the machine. This is easily explained by the fact that the treatment is much milder and acts on long thin fibers which are very easily freed of any incrusting matter.

Taking as a basis for calculation the pre-war price of esparto pulp; viz., 40 francs per 100 kilos, we shall find a very appreciable decrease in the cost of producing it by the new process. Considering the former cost of production, we note that the cost of the raw material for 100 kilos of dry pulp (240 kilos of esparto at about 10 francs per 100) was about 60 to 65 p.c. of the total cost. Herein lay the stumbling-block of the English process and the criterion of its application. The higher yield obtained by the new method of treatment lowers this factor, since only 200 kilos of esparto are required, and moreover there are other advantages which I shall now indicate.

240 kilos of raw esparto at 10 francs . . . . .	24.00
200 kilos of raw esparto at 10 francs . . . . .	20.00
<hr/>	
Saving Fr. . . . .	4.00
Decrease in cost of cooking liquor . . . . .	2.00
Decrease in cost of bleaching liquor . . . . .	1.10
* Elimination of cost of soda recovery . . . . .	1.25

Total Fr. per 100 kilos . . . . . 8.35

\* This is not strictly in accord with item 4, above unless the alkaline wash water is used for a new bath of liquor, or for cooking a low grade stock as mentioned.—Ed

Further experiments have proved the feasibility of preparing a second grade pulp by the same method, a semi-chemical pulp which can find extensive use in the manufacture of all the ordinary sorts of paper. The crushed grass is treated with spent liquor which has been used for one cook, yielding 65 p.c. of a pulp which bleaches fairly satisfactorily with 3 p.c. or bleaching powder. When the liquor has thus been used a second time, after being slightly strengthened if need be, the recovery of the soda becomes useless and superfluous.

Of course this process requires a larger amount of power, owing to the preliminary mechanical treatment of the material, and this might be a serious drawback if it had to be generated from steam. But when cheap hydro-electric power is available this becomes a negligible item. In certain cases it might even be possible to crush the esparto in one mill and then transport it to another mill to be converted into the finished pulp or pulps.

E. ARNOULD,

Ex-Paper Mill Manager.

**TECHNICAL QUESTIONS.**

From La Papeterie

**Question :** For making rose, geranium, or coral colored papers I use rhodamine. My customers complain the paper bleeds. I have unsuccessfully tried the use of several mordants. Could somebody help me out?

**Answer :** For the manufacture of such papers, use only light colored unbleached or semi-bleached pulps. About half an hour before adding the color, put about two pounds of alum per 100 pounds of pulp in the beater. Dissolve the colors completely and add them separately about 2 hours before sending the stock to the machine chests.

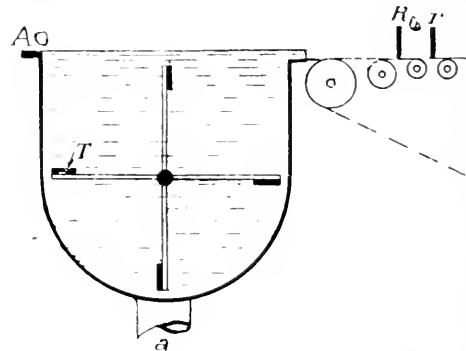
**Question:** In the mill where I work there is no color in the color being added in the machine chests, which contain two beatersful. At times insufficient color has been put in, so that more must be

added in the machine chests; and as these are not large relatively little water can be used. We make only white and very light-colored papers, and the color is nearly always streaky, especially when using violet or Victoria blue. How can this be avoided?

**Answer:** Since you cannot use much water to dissolve the color, by adding a little tale or kaolin to your solution streaking will be prevented.—A.P.-C.

**Question :** How can paper be made to have the same strength in machine—and cross-direction ?

**Answer :** We think that the device shown in the sketch would tend to equalize the strength of the paper in the machine—and cross-direction; but as we have not tried it out we cannot say what results would be obtained.



The stock could be led in at **A** or **a** in such a manner that it does not overflow and that its speed be reduced to a minimum. The agitator should have a low speed, say about 15-20 R. P. M., its function being to entangle the fibers so that they do not arrive on the wire mostly parallel to the machine direction. It should be noted that the blades of the agitator should never emerge from the stock, that the latter should flow out evenly, and that the slices should be set as close as possible to the tank containing the agitator.

**BE ON THE JOB.**

Did you ever stop to think how important it is that you be on the job everyday? We are constantly getting reports of men who are absent for a day for no known reason. They are just tired, or do not feel like working, or they want to go away, or have some equally weak excuse for staying out. Being absent means that somebody else has to do your work, either a man from another department, or else someone in your department doubles up. In either case, it means extra work and harder work for someone who does not know your job and it holds up production. We all have thrown a rock into a pool and seen the waves grow wider and wider until they touch the shore. Well, your being absent is like that. It affects not only the people in your department, but everybody all along the line.

Be on the job every day. You are needed there. It means easier work for all and better production, and for you it means a bigger envelope at the end of the week. All the extra dollars you can earn and stow away in the bank in these days are going to be worth twice as much as they are now when prices drop.

## Timber Restrictions Justified

"The Paper Shortage," in its relation to forestry, was the principal theme of the Ninth Annual Forestry Conference, held under the auspices of the Society for the Protection of New Hampshire Forests at New London, N.H., last week. Its discussion led to some exceedingly frank statements in regard to Canada's timber regulations and brought out, most significantly, the fact that the Federal and State governments in the United States are now making belated efforts to stop unnecessary drains upon their forest resources and to adopt measures that will ensure a sustained yield from these resources for the various industries depending upon them for a supply of raw material, particularly the pulp and paper industry. The operations of the New York Conservation Commission, which now has under its control one and one-half million acres in the Adirondack mountains and about six hundred thousand acres in the Catskills, from which no trees are allowed to be cut for any purpose, and of the Weeks Act, through its Forest Service, large tracts of forest lands to be held exclusively for the public, were fully explained.

The U. S. Government, it was stated, has set aside from the public domain 155 million acres of national forest in the West, a territory equal to all of the six New England states combined with the Middle Atlantic states as far as Maryland. It has purchased 430,000 acres or 700 square miles (46 per cent. of the original plan) in the White Mountains, and 1,200,000 acres in the Southern Appalachians (26 per cent. of the original plan) and is still adding to its holdings, while a new law, to be introduced in the next Congress, and fathered by Col. William D. Greeley, Chief forester of the United States, proposes an annual Federal appropriation of \$1,000,000 for forest protection, care and management and distribution of forest planting material, with State appropriations to be made dollar for dollar, all expenditures being contingent upon the adoption of Federal standards; an annual appropriation of \$500,000 for a complete and accurate forest survey of the country and appropriations of not less than \$3,000,000 yearly for the purchase of lands under the Weeks Act, which would be extended in its operations beyond the White and southern Appalachian Mountains, as well as increase in National forest tracts through exchange or purchase to not less than 200,000,000 acres. Other appropriations proposed are \$1,000,000 a year for forest planting in National parks, \$500,000 a year for forest research and an extension of the Federal farm loan act to permit loans for periods of 50 years for the purchase of cut-over or immature forest lands.

To the Canadians present at the Conference the proposals suggested provided ample justification for whatever steps the Canadian provinces have found it necessary to take for the preservation of their forest resources and an incentive for further efforts in that direction. The American Government, in the last analysis, can hardly object to Canada's doing what is now being undertaken in the States, since the authorities there awoke to a realization of the harm worked by permitting the unrestricted destruction of their forests and no settled policy for their regeneration.

Among those present and taking part in the discus-

sion were Charles Lathrop Paek, president of the American Forestry Association, E. A. Sherman, associate forester of the U. S. Forest Service; Prof. Jas. W. Toumy, director of the Yale Forest School, George W. Sisson, Jr., president of the American Paper and Pulp Association; R. S. Kellogg, secretary of the Newsprint Service Bureau and a number of other representative American authorities. Canada was represented by Ellwood Wilson of the Laurentide Company, Clyde Leavitt of the Commission of Conservation and Edward Beck of the Canadian Pulp and Paper Association, whose address was printed in the last issue of the Pulp and Paper Magazine.

The discussion was opened with the reading of a paper prepared by Henry S. Graves, formerly chief of the U. S. Forest Service, in which was reviewed the so-called "pulpwood controversy" between the United States and Canada.

"The extensive public discussion of the subject, the widely-differing claims put forward from interested parties and public officials of the two countries, and the controversial character of the public utterances being circulated, indicate the probability that the matter will be pursued further and, if not handled in a constructive manner, may easily cause an unfortunate misunderstanding with a friendly neighbor," was a prediction made by Mr. Graves, who counselled handling the situation from the standpoint of the broader permanent interests of the two nations.

"The Underwood resolution passed both Houses of Congress, but failed to become a law because of the failure to receive the President's signature. Nevertheless, the fact of its passage by Congress and the clear intention of Congress as expressed in the hearings before the House Committee on Foreign Affairs have caused widespread resentment in Canada," he said.

"The American Congress has approached this matter in a spirit of coercion, with the expressed intention of using the economic position of the United States to force Canada to take an action which is believed by the Government of that country to be permanently injurious to her. Canada has undertaken to build up a manufacturing industry to use the raw materials from her forests. She maintains that the raw resource is far less than is usually supposed and not more than enough to supply the plants which have been or will in the future be installed. She is unwilling to sacrifice this home industrial development by sending out of the country the raw material essential to give it permanence. The American Congress did not act on the basis of official Canadian data regarding her resources, but on figures presented by the American manufacturers that have been shown by Canadian officials to be erroneous.

"On the other hand," he said, "it is doubted whether Canada has ever considered, or been given an opportunity to consider, the economic problem in this country in its broadest aspects with a view to working out plans with the United States whereby each country would assist the other and both be greatly benefited."

Mr. Graves' solution was for "a conference by representatives of the two countries to consider the whole economic problem of both countries with a view of working out a plan of mutual assistance." He proposed that such a conference should consider:

(A) The extent of the pulp wood resources both in Eastern Canada and the northeastern United States,

including what is now standing and what is being produced by growth.

B. The needs of both countries for pulpwood in connection with the established manufacturing industries and those which may be established in the future.

C. The possible total amount of material which might be exported from Canada without injury to her interests.

D. The possible amount which could be furnished during a temporary period, of perhaps ten years, pending the building up of an American paper industry in the far West.

E. Possible modification of the present restrictions in Canada which would permit the export of pulp wood from the Crown lands in quantities equivalent at least to the material cut from private lands owned by Americans in Canada and manufactured in that country.

F. Possible modification of the laws of New York which would permit the use of certain quantities of pulp wood from the State lands where cutting is now prohibited.

G. Joint effort and co-operation by the two countries in measures of forest perpetuation where there are common interests between the two countries.

Mr. Ellwood Wilson, after sketching briefly the operation of the timber land of the respective provinces, spoke very plainly about the rights of the people of Canada and the attacks made upon them by those responsible for the agitation leading up to the passage of the Underwood resolution.

"It is certainly entirely within the rights of the Government to say what shall be done with the timber cut on its own lands," he said, "and it is not in any way overreaching its powers when it requires such timber to be manufactured in Canada.

"Several American firms, who purchased timber licenses did so with an eye to the future, looking forward to the time when they would either have exhausted their own supplies or when it would be more convenient or profitable for them to manufacture nearer their source of supply in Canada. Some of these companies, without any protest whatever, came into Canada and decided to build mills so as to be near their supply of raw material and to secure cheap water power and they have been manufacturing very successfully and sharing in the prosperity of the pulp and paper industry.

"Most of the agitation for bringing our Crown lands wood to the United States has come from one company which has been manufacturing lumber for a number of years from their Canadian timber licenses and who, before they started the agitation, made plans and commenced to build a mill in Canada. The small group of American mills which have agitated for the free export of Crown lands wood have entirely misrepresented the situation and have made statements which they must have known were not matters of fact. They have deliberately tried to stir up trouble between the two countries and they will find that, as always, such methods will react unfavorably to their users.

A situation analogous to that in the Eastern Provinces of Canada exists in the State of New York where the State has bought more than a million acres of Underland, much of it carrying valuable pulpwood timber, and has shut it up altogether against exploitation of any sort or kind. Tracts of land have been con-

demned by the State and their owners compelled to sell them and, only recently, the very company carrying on the strongest agitation for free access to Quebec pulp wood has sold a tract of pulpwood to the State of New York and now no timber can be cut from it. It would seem much more reasonable for this company and others in New York State to carry on an agitation compelling the State of New York to allow them to cut timber in the forests reserves before they begin to agitate for the removal of the manufacturing clause from the Quebec law.

"If New York has the right to take up timberlands and forbid any cutting whatever on them, the Province of Quebec certainly has the right to say what timber shall be cut and how it shall be manufactured on its own land.

"Until the United States takes some steps to adopt forestry methods in the utilization of its timber and to frame some national and State policies for the proper conservation and exploitation of its resources it seems hardly right, that having wasted its own birthright, it should now attempt to utilize Canadian forests in the same way."

Mr. Wilson concluded with a statement of what Quebec is doing in the way of encouraging timber conservation and reforestation in the province.

Mr. George W. Sisson, Jr., president of the American Paper and Pulp Association, spoke on behalf of the American manufacturers. He made no effort to refute the statement of the facts in regard to Canada's position in the pulpwood controversy, but was inclined to lay the interruption of exports of raw pulpwood from Canadian Crown lands to the influence of certain unnamed "financial interests". He commended Mr. Graves' suggestion for a joint international commission to consider the question and quoted from his address delivered at the annual banquet of the Canadian Pulp and Paper Association in Montreal two years ago, in which he said:

"Co-operation on a large and magnanimous scale and in the most sympathetic spirit must be the rule, if the industry is to prosper in both countries. You need our markets; indeed, must have them, and we have gladly opened them to you. Common fairness indicates that you should not deny to us access to your raw materials that may be needed, and a restrictive policy which goes beyond more than fairly protecting your national requirements would not be in accord with the co-operative spirit that must hereafter rule international relations."

Later, in the discussion, Mr. Sisson gave the impression that there is ground for believing that the export restrictions now applying to wood cut from Crown lands in Quebec are likely to be extended to wood cut on freehold lands also and that it is this fear that has inspired the agitation in the States for pressure to secure a lifting of the restrictions now in existence.

On this point he was reassured by Mr. Wilson and Mr. Leavitt, who reiterated that private lands were in no wise affected by the existing regulations nor likely to be by any future ones.

A resolution was introduced favoring the appointment of an international commission to investigate the pulpwood question but was subsequently withdrawn.

Mr. Clyde Leavitt gave an interesting talk upon the Imperial Forestry Conference held in London last month, which he attended as a representative of the Canadian Government.

## EXAMINATION OF CHINA CLAY

By Paper Expert

Following the scheme of examination set out in the previous chapter we have first to consider the question of moisture.

This is not quite so simple a matter as it appears, for no standard of moisture has yet been fixed. Ordinary china clay as delivered to the paper mill in bulk or in sacks contains a varying percentage of water, some proportion of which is natural moisture derived from the water originally used in washing the clay, and the remainder due to water chemically combined with the silicate of alumina. The first name is clearly excess moisture if we accept an air-dried clay to form a standard for contract of purchase. The second, or chemically combined water, bears a constant ratio in the air-dried clay of which it forms a part.

The percentage of natural moisture left in the clay when removed from the drying kilns depends entirely on the extent to which the clay has been dried, and the papermaker may well consider that he is entitled to determine the amount coming under this description and to regard any large excess as something abnormal, to be ultimately allowed for in settling the account for payment.

The condition which thus obtains is made more evident by a stated case. For example, the papermaker draws a representative sample from a number of bags, and finds that on exposing 5 lbs. previously well pulverised, in a thin layer, it gradually loses weight, and finally comes to a more or less constant weight at 4 $\frac{1}{2}$  lbs., representing a loss in weight by simple exposure to air of 5 per cent. In terms of a bulk consignment this would mean that 100 tons of moist clay delivered contains 5 tons of moisture which would evaporate if the clay were freely exposed. Certainly 100 tons of such clay if all was retained in the paper would only give an added weight of 95 tons or probably less to the paper produced. The question then arises. Is the weight of clay to be paid for 95 tons or 100 tons? A small percentage of 5 per cent. might not be considered as open to dispute, but if no standard is set up, such proportions as 8, 10, or 12 per cent. might clearly be present, and under such circumstances where is the line to be drawn?

Since the weight of even an air-dried clay fluctuates in accordance with the humidity of the air, it is simpler to accept as a hypothetical basis the weight of clay at 100 deg. C. This does not mean that the clay is to be completely dried in bulk at 100 deg. C. (212 deg. Fahr.) before delivery, but that the clay delivered is calculated to its condition at 212 deg. Fahr.

### Sampling the Bulk

The careful and systematic sampling of the bulk in order to secure a representative sample then becomes a matter of importance, particularly with deliveries containing large masses of damp clay. When the material is delivered in sacks, at least 3 per cent. of the total number taken from the various sections of the stock, or from different trucks should be opened and 5 or 6 lbs. of clay withdrawn, lumps and powder in right proportion as dictated by judgment. If the material is in crude form despatched per barge or truck, reasonable care must in like manner be exercised. The quantity drawn out in this way is rapidly down to a sample weighing ultimately 2 lbs. This is crushed to uniform condition, properly quartered,

quickly transferred to an air-tight vessel and retained for examination.

### Examination of Sample

In the absence of any convenience for drying and accurate weighing of small sample, the best plan is to weigh the whole sample as exactly as possible, and expose the clay broken down and spread out in a thin layer to air until it reaches an approximately constant weight.

The correct method of determining the moisture is to dry 100 grams, or an exact 4 ounces, taken from the well-mixed bulk sample. This is weighed in a porcelain dish or basin, and the sample dried in an oven at 212 d g. Fahr. to constant weight. The loss is moisture driven off at 212 deg. Fahr.

### Water Chemically Combined

Clay dried at the temperature named still retains a definite percentage of water which can only be driven off at a high temperature by strong heating in a platinum or silica vessel. This amount is a constant between 9.8 and 10.2 per cent. giving an average of 10 per cent.

This has an important bearing in calculations made with reference to the percentage of clay added to the pulp in the beating engine. The percentage of loading or ash in paper is ascertained by igniting a weighed quantity of the paper, the inorganic residue remaining being usually taken as mineral matter added.

In the case of clay two corrections have to be made before the correct estimate of clay retained can be worked out. If the clay as bought contains 10 per cent. of natural moisture, or excess moisture, whichever term is applied it also contains 10 per cent. of water of chemical combination. Hence every 80 parts of mineral residue in a paper load of which china clay corresponds to 100 parts clay as bought. If, for example, the paper shows a residue of 8 per cent. of the corrections so applied would give 10 per cent. of actual retention.

The necessity for some standard percentage of "natural" moisture, using this phrase to signify the loss sustained by drying a sample of clay at 212 deg. Fahr. (100 deg. C.) thus becomes an important question, not only as a matter of initial cost, but requiring to be allowed for in calculating the amount of clay retained.

China Clay Trade Review.

## IN HAWAII

Mr. C. W. Mason, who was formerly making paper in British Columbia, writes from Oloa, Hawaii that the mill, of which he is superintendent, continues to produce paper from bogasse. It is the intention, after the first of the year, to make wrapping, as well as machine paper. Mr. Mason talks of sitting on the brink of the volcano and watching the lava boil, and of exploring lava caves, some of which run 20 or 30 miles into the mountains.

Ottawa, Ont. The new trade agreement concluded recently between Canada and the British West Indies has now been made public. It provides for an increase in the mutual preference from twenty to fifty per cent.; it extends the free list, and makes arrangements for increase steamship service—a weekly service between Canada and the eastern group of the British West Indies, and a fortnight service with the Western group.

### INTERNATIONAL ANTICIPATES TROUBLES

The Wall Street Journal says: International Paper Company has notified its customers that it will make contracts for 1921 only on the basis of 80 per cent. of the allotment for the current year. An offer is made to supply print paper for 1921 on this basis under the same contracts now in effect; that is, paper will be supplied up to an agreed tonnage, with prices to be adjusted each quarter by agreement governed by cost of production.

In notifying customers that print paper allotments will have to be curtailed next year, officials say they believe fuel, cars and pulpwood will be difficult to obtain, and that they are not confident that normal output can be maintained. A small percentage of the 1921 tonnage will be reserved to be sold to small publishers' agencies formed for collective buying.

International Paper has been able to keep production at maximum figures so far this year, and it is now running between 1,800 to 1,900 tons daily, of which two-thirds is newsprint. Officials are not at all confident that this output can be maintained in view of shortage of cars and the consequent lack of supplies.

Referring to the difficulties encountered last winter in obtaining transportation facilities, the company in notifying publishers of reduction in allotment, says in part: "Indications are that next winter most of these troubles will continue, and we expect that coal cars, and pulpwood especially, will be scarcer than ever before. We are extremely apprehensive, therefore, that we will not be able to turn out full production in 1921, as we have this year. We anticipate a continued over-demand for paper next year in spite of new tonnage coming on the market, and in spite of the higher prices for all grades of paper likely to prevail on account of the rapidly mounting cost of pulpwood and other elements of cost.

"Present prices for paper do not nearly reflect current prices in the general market for raw material, viz., \$35 a cord for pulpwood, \$110 a ton for ground woodpulp, and \$170 a ton for sulphite pulp. This advance in costs is world-wide, and if it continues must inevitably cause a higher level in prices for paper."

### MANOUAN PULP & PAPER ORGANIZATION

A new pulp and paper industry will shortly be developed along the St. Maurice territory to be known as Manouan Pulp & Paper, Ltd., according to the "Financial Post." The limits are contiguous to those of the Laurentide Company, the Brown Corporation, the Belgo-Canadian and other industries, and it is proposed to construct a groundwood pulp mill, as well as to develop the pine, and to sell the surplus power. The limits have been owned by the McLaurin interests for a number of years and so far have not been developed. The mill site will contain 1,980 acres, and the ultimate water power will be some 28,000 hp.

In connection with this work an issue of securities will be made. There will be a bond issue of \$2,500,000 authorized with \$2,000,000 to be issued in the form of 7 per cent. first mortgage sinking fund gold bonds, dated Sept. 1, 1920, and maturing in 25 years. In addition, will be 7½ per cent. convertible 15 year debentures of similar dates of which \$900,000 will be issued. Of common stock \$1,000,000 will be issued.

The interests behind the new corporation are said to include a number of prominent American and Canadian interests, who are already largely identified with the pulp industry. Prominent among them are Frank L. Moore, President and Managing Director of New

ton Falls Paper Company, of Watertown, New York, and former President of the American Pulp and Paper Association; Thomas Fynes, of the Continental Bag Company, of New York, and several pulp and paper companies, both in Canada and the United States, and George R. Smith, M.P.P., manager of the Bell Asbestos Mines.

### TANK CARS FOR LIQUID SULPHUR DIOXIDE.

Prepared by the Advertising Department of the Standard Tank Car Company of Sharon, Pennsylvania.

When the Tank Car was invented 50 years ago, it marked an epoch in the petroleum industry. The success these modern carriers achieved in quick, safe and economical shipments of petroleum and petroleum products soon caused them to be adapted to the transportation of other liquids, and with equal success. Today the cycle is completed with the building of Tank Cars for explosive chemicals. Tank Cars finally have solved the problem of bulk shipments of each of the whole wide range of commercial liquids.

The latest developments in the Tank Cars are exemplified in the type used in the handling of sulphur dioxide.

This commodity has many useful applications in the arts and manufactures. The Canadian paper maker is particularly interested in it for its value in preparing wood pulp and paper. Also it is employed as a bleaching agent, applied as a primary bleaching agent where chlorine is unsatisfactory and as a secondary one to remove the last traces of chlorine after the pulp has been bleached. Enormous quantities of sulphur dioxide are used by vitriol manufacturers, and it plays a part in tanning leather and in treatments of fur, wool, hair and other materials that are feltable.

Sulphur, as is well known, is a plentiful mineral, and wherever there is sulphur it is easy to produce sulphur dioxide. The principal of the preparation of sulphur dioxide is one of burning sulphur in air. The sulphur is united with two parts of oxygen, forming  $SO_2$ , the gas, sulphur dioxide. It is prepared commercially as a by-product of smelting plants.

At ordinary temperatures sulphur dioxide is an incombustible gas with the odor of burning sulphur. It is condensable to a liquid at a temperature obtained by mixing ice and salt or through pressure. It is obvious that for practical shipments it must be in liquid state, and the containers must insure a constant low temperature and ample resistance to pressure. Because of the propensity of the liquid to convert back into a gas, railroads class sulphur dioxide as an explosive.

Gasoline and many explosive chemicals were shipped in Tank Cars before it was considered practicable to build tanks for sulphur dioxide. But the quantities of sulphur dioxide required demanded large bulk shipments, and so Tank Cars have been designed to meet the requirements.

The tanks for sulphur dioxide transportation must be tested to resist a pressure of 300 pounds to the square inch. They must be equipped with safety devices set at 200 pounds. To preserve a low temperature, the tanks are heavily insulated with mineral wool, and the wool in turn is covered with a watertight steel jacket.

These specifications conform to the regulations of the American Railway Association and of the Bureau of Explosives. What is more, they make the shipments of Sulphur Dioxide almost as simple as that of a harmless liquid.



### F. T. C. ON U. S. NEWSPRINT FOR JULY.

The average or normal production of total print and standard news based upon the total combined production for the years 1917, and 1918, and 1919 amounted to 112,736 tons of total print and 101,400 tons for July, 1920, of standard news for the period corresponding to July. The actual production amounted to 129,853 tons of total print and 118,810 tons of standard news, an increase in the case of the total print of more than 15 per cent. over the average for the three-year period and an increase in the case of standard news of more than 17 per cent. over the average.

The increase in the production of newsprint in July 1920 over July 1919 amounted to slightly less than 14 per cent. for total print and 17 per cent. for standard news, being 129,853 and 113,929 tons, respectively.

Mill stocks of both total print and standard news decreased during July, 1920.

In addition to the stocks given above, 579 tons were reported on hand at terminal and delivery points on July 31, 1920.

#### Newsprint.

Reports from 89 mills operating 193 machines running full or partial time on newsprint paper showed the following loss of time during the month of July, 1920: repairs, 869 hours; other reasons, 402 hours, of which 310 was for lack of coal.

The total time the machines were idle was 156 hours less than that shown in June. No lost time due to lack of orders or labor was reported by newsprint mills.

#### Imports and Exports.

The imports and exports of printing paper not suitable (practically all newsprint) and of wood pulp for the month of June 1920 compared with the month of June were as follows:

	June 1920	June 1919
	Net tons	Net tons
Imports of Newsprint (total) . . . . .	58,739	52,619
From Canada . . . . .	58,182	52,619
From Norway . . . . .	557	0
Exports of Newsprint (total) . . . . .	5,204	9,552
To Argentina . . . . .	3,493	2,549
To China . . . . .	267	238
To Cuba . . . . .	701	718
To Australia . . . . .	175	224
To other countries . . . . .	568	5,993
Imports of Ground Wood Pulp (total) . . . . .	19,195	15,572
Imports of Chemical Wood Pulp (total) . . . . .	50,125	24,350
Unbleached Sulphite . . . . .	24,792	10,512
Bleached Sulphite . . . . .	12,292	2,943
Unbleached Sulphate . . . . .	12,950	10,224
Bleached Sulphate . . . . .	91	671
Exports of Domestic Wood Pulp . . . . .	2,518	4,469

The imports of newsprint for June 1920 were 6,120 tons more than for June 1919. The exports for June 1920 were 4,348 tons less than for June 1919.

The tonnage to "Other Countries" under the "exports of newsprint" for June 1920 includes 104 tons to Philippine Islands, 56 tons to Canada, 52 tons to New Zealand, 49 tons to Dutch East Indies and 38 tons to United Kingdom.

The imports of mechanically ground wood pulp for June 1920 were 3623 tons more than for June 1919. The exports of domestic wood pulp were 1951 tons less than for June 1919.

The imports of chemical wood pulp (total) for June 1920 were 25,775 tons, greater than for June 1919.

#### Jobbers' and Publishers' Stocks.

Stocks of rolls in the hands of jobbers at the end of July were 481 tons more than the stocks in the hands of the same jobbers at the beginning of the month. Stocks of sheets were 439 tons greater at the end of July than at the beginning of the month. The net increase in the total stocks of newsprint in the hands of jobbers at the end of July amounted to 920 tons.

Commitments to sell roll news were 1,876 tons greater than commitments to buy. Commitments to sell sheet news were 1093 tons less than commitments to buy. Total commitments to sell both rolls and sheets were 783 tons greater than commitments to buy.

Publishers' stocks increased 20,827 tons during the month. The average daily tonnage used during July was 403 tons less than the average used in June.

Publishers' stocks and transit tonnage on July 31 represented slightly more than 16 days supply at the existing rate of consumption.

Sixty-six publishing concerns held about 49 per cent. of the tonnage on hand at the end of the month.

The domestic consumption of standard news by metropolitan dailies using between one-half and three-fourths of a million tons annually decreased more than 3 per cent. for July 1920, compared with July 1919, and increased more than 18 per cent. for July, 1920, over July 1918.

#### Average Prices Paid by Publishers.

The weighted average price of contract deliveries from domestic mills to publishers during July 1920, f.o.b. mill in carload lots for standard news in rolls, was \$5,211 per 100 pounds. This weighted average is based upon July deliveries of approximately 48,000 tons on contracts involving a total tonnage of approximately 115,000 tons of undelivered paper manufactured in the United States.

The weighted average contract price based on deliveries from Canadian Mills of about 23,000 tons of standard roll news in carload lots, f.o.b. mill in July 1920, was \$4,938 per 100 pounds. This weighted average is based upon the July deliveries on contracts involving about 175,000 tons of undelivered Canadian paper. The greater number of these are short-term contracts covering the year 1920.

The weighted average market price for July of standard roll news in carload lots f.o.b. mill based upon domestic purchases totalling more than 5,000 tons was \$10,498 per 100 pounds. This weighted average may be less than market quotations on account of contract relations, quantity discounts, mill stock ownership and other causes unknown to the Commission.

Plans of the Pennsylvania State Forestry Department for extensive reforestation in the wood and on the waste lands of Pennsylvania this year will call for the largest amount of seeds ever used and efforts are being made to secure as much as possible from indigenous trees. In several counties tests will be made this fall of planting of North Carolina poplars to furnish a new supply of pulpwood for the State's industries. Trees have been selected and will be planted on state lands of different types, the growth and general conditions being checked.

## British Trade News

From Our London Correspondent.

London, 13th August 1920.

Cropper & Co., in their annual report for the year ended June 30, 1920, state that the net profits after deducting depreciation and other expenses, amount to £71,891, to which has to be added £2,385 brought forward. The directors proposed final dividend on the ordinary shares of 7½ per cent, making 10 per cent for the year and in addition a bonus of 10 per cent, to write £1,000 off leasehold premises, to transfer £5,000 to the reserve account and £500 to the reserve for doubtful debts. The directors also propose to transfer £40,000 to the special reserve account leaving to be carried forward £2,997. The company are also about to provide further working capital and the authorised capital has consequently been increased to £500,000 divided into 250,000 7½ per cent cumulative preference shares of £1 each and 250,000 ordinary shares of £1 each. It is reported that 50,000 preference shares credited as fully paid were issued to the holders of the 100,000 ordinary shares as a bonus, in the proportion of one preference share for every two ordinary shares, and the issued capital, therefore, now consists of £100,000 in ordinary shares of £1 each.

### Colthrop Board Mill.

Messrs Cropper & Co., report that the Colthrop Board and Paper Mills, in which they are largely interested, has had a successful year's trading and has paid a dividend of 20 per cent. The development of the business has necessitated a considerable increase of capital and a further small participation in the new issue of shares has been taken up. Containers, Ltd., may be expected to shortly be in a position to commence business. The factory has been built and the erection of the machinery is practically completed.

### Dutch on Strike.

News has reached England that a series strike in the Dutch board mills has taken place and the chances of a settlement are very remote, some saying that it will be the middle of September before terms satisfactory to both sides can be arrived at. In Scandinavian mills of late there has been a very unsettled feeling amongst the workers, but the present trouble in Holland will hit America more than England. Just as the strike occurred America was taking advantage of a slack time in the Dutch mills and was just completing some extensive business transactions when the labour upheaval broke out. Some of the straw stack in the mills have been burnt and there has been fighting.

### A New Catalogue.

Messrs. Ashworth and Parker, the well-known English engineering firm of Bury, Lancs., have just issued two interesting catalogues for the use of their customers in the papermaking industry. Considerable skill and ingenuity have been exercised in getting out this catalogue and I would suggest that be placed at the disposal of Canadians.

### Old Mill Re Started.

Killeen, Co. Dublin, in Ireland, possesses an old paper mill which in the days of our Great Grand Fathers, there used to be made bank note paper for the Bank of Ireland. This bank is the concern where Government money in Ireland is stored. I am informed that the old disused mill at Killeen is to be re-started by the Killeen Paper Mill Co., a local body, and

browns and wrapping paper will be turned out instead of the bank note products as of yore.

### Usk Paper Mills.

Messrs. Towgood and Beekwith Ltd., have disposed of the Usk Paper Mills, Crickhowell, to the Usk Paper Mills, Ltd., but they will retain a holding in the business. For sometime past considerable improvements have been undertaken in this mill and when finished the company will have a neat and compact up-to-date concern.

### Pulp Imports.

The imports of pulps for July show a considerable increase, as will be seen from the following figures compared with the same month in 1919:

	1919	1920
	Tons	Tons
Bleached chemical dry . . . . .	925	1,660
Unbleached chemical dry . . . . .	44,191	48,155
Wet chemical . . . . .	537	3,154
Groundwood, moist . . . . .	63,397	59,347
Groundwood, dry . . . . .	1,785	3,488
<b>Totals . . . . .</b>	<b>110,835</b>	<b>115,804</b>

### Pulp Shipments From Canada.

Some good shipments of Groundwood are now arriving in the British market from Canada. The figures for July, compared with the same month last year, are as follows:—

	1919	1920
	Tons	Tons
Sweden . . . . .	23,112	20,695
Norway . . . . .	33,515	21,794
Canada . . . . .	6,770	15,725
Other Places . . . . .		1,133

Canada's imports here exceed June by 6,000 odd tons while Norway's shipments when compared with June show a reduction of 2,189 tons, Sweden's shipments increased on June to the extent of 3,000 tons. The figures now for the seven months ending July are as follows:—

	1919	1920
	Tons	Tons
Sweden . . . . .	50,795	49,462
Norway . . . . .	183,997	197,463
Canada . . . . .	12,440	26,185
Other Places . . . . .	4,099	4,100

These figures show the satisfactory increase of business with Canada on the seven months. The labour troubles and other set-backs in Sweden can be read in the returns from this country.

### Chemical Pulps.

Though considerable shipments are received from Canada of unbleached chemical pulp no actual figures can be obtained about the Dominion, but under the heading of "Other Places" more than one half of the shipments are from a Canadian source.

### The Pulp Market.

Buyers of pulps are mostly concerned in getting their supplies in for the Fall and Winter. Prices are firm and the holiday season is on. Quotations are about as follows:

Bleached Sulphite . . . . .	£80	£85
Easy Bleaching . . . . .	57½	62
Sulphate unbleached . . . . .	50½	53
Soda Kraft . . . . .	40	42½
Groundwood, moist . . . . .		17½
Groundwood, dry . . . . .	—	34



# UNITED STATES NOTES

In a model housing scheme contemplating the building of at least 100 homes the Fitzdale Paper Company is solving the housing problem of the papermakers employed at its plant at Fitzdale, Vt. These homes are being erected at the rate of 30 at a time, and the project sizes up as one of the leading building enterprises now going on in Northern New England.

Fred Webster, who was formerly associated with the advertising department of the American Writing Paper Company, has started a paper firm at Holyoke, Mass. A charter has been granted to Mr. Webster, Harlan P. Small and Gordon Ireland as incorporators under the firm name of the Fred Webster Paper Company. The capitalization is \$20,000.

The George Banta Paper Company, manufacturers of printed and plain Kraft gummed tape, adding machine rolls and special roll printed products at Menasha, Wis., have changed their corporate name to the Central Paper Products Company. No change in officers and ownership, however, has taken place. The factory is now being operated at a new location in Menasha.

In the annual report of the United Paperboard Company, the financial statistics of which were published in the last issue of the **Pulp and Paper Magazine**, Sidney Mitchell, president, states that the mill of the company at Urbana, Ohio, recently damaged by fire, is being rebuilt with additional equipment of modern construction; that the mill at Yorktown, Ind., which has been idle for some time, is again operating profitably, and that the Thompson mill, which was closed for repairs during several months after a walkout of the employees is now also in operation and helping to meet the increased demand for the company's product. Improvements to the extent of \$106,852.00 were completed during the year, says Mr. Mitchell's report.

The **Red Cross Magazine**, official publication of the American Red Cross, has been forced to suspend because of famine prices of white paper. Announcement to this effect was made in the final issue of the magazine, the October number. Through its bulletins, the **Junior Red Cross News** pamphlets, and "with the cooperation of the press," the notice states, the national headquarters of the organization hopes to keep its information service in full swing without the magazine.

The International Paper Company announced last Thursday it would make contracts for 1921 for print paper only on the basis of 80 per cent. of the allotment for the current year. In announcing the 20 per cent. reduction in supply it was said fuel, cars, and pulp wood will be scarce during the coming year, and it was believed the normal output could not be maintained.

At the meeting held last week in New London, N.H. attended by leading forestry experts and paper manufacturers from the United States and Canada, Col. Henry S. Graves, former chief of the United States Forest Service and George W. Sisson, Jr., president of the American Paper and Pulp Association, urged that the controversy over pulpwood from the crown land of Eastern Canada be submitted for settlement

to a conference of representatives of the two countries. No action was taken, however, upon the suggestion. The Canadian Policy in the matter was defended by Ellwood Wilson, chief forester of the Laurentide Company of Grand Mere, Quebec. Edward Beck, secretary of the Canadian Pulp and Paper Association, who considered the question of removing the Canadian restrictions one for judicial determination. An annual appropriation of \$1,000,000 by the Federal government for forest protection and distribution of forest planting material, with similar State appropriations, was proposed to the convention by R. S. Kellogg, secretary of the News Print Service Bureau. Mr. Kellogg also proposed an annual appropriation of \$500,000 for a forest survey, and 3,000,000 yearly for the purchase of lands beyond the White and Southern Appalachian Mountains. Another suggested appropriation was \$1,000,000 a year for forest planting in national parks.

A charter has been granted at Richmond, Va. to the Hummel-Ross Fibre Corporation, capitalization \$5,000,000, which is to engage in the manufacture of wood pulp, strawboard paper and fibrous products at Hopewell, Va. It is said that Milwaukee capital is largely interested in the project. Mr. James Beveridge is general manager.

Two New York concerns are reported as having opened negotiation for the purchase of the plant of the National Pulp Company at Westfield, Mass. The property is now held by the New England Construction Company. The plant was formerly operated by the Sprindale Paper Company at Westfield, Mass. The plant was formerly operated by the Springdale Paper Company. It was acquired but recently by the construction company.

Walter C. Carlson, president of the Milwaukee Paper Box Company, announces that the new factory being built for his concern will be in operation early next month. The new plant, described as one of the most modern of its kind in the world, is attracting much attention. Various innovations in box making will be introduced. The material is to be transported to the top story of the factory and will go through the various processes of box making on its return trip to the shipping room in the lower floor.

Envelopes sold by the United States Government at its post offices and which every station and substation used to have in unlimited quantities and in great varieties of sizes, shapes and colors, have been in such great demand by business houses in the larger cities that there is now a shortage in the supply. One of the reasons for this shortage is that business houses have come to realize in increasing numbers that the Post Office Department provides envelopes with return address printed on them for less than the stock alone would cost if bought from the average printer. Quantity orders for stamped envelopes used to be filled in ten days to two weeks. Now the prospective purchaser is told that he must wait six to eight weeks. The universal shortage of paper is another cause contributory to the famine as is also the difficulty in obtaining labor experienced by the contractor in Dayton, Ohio, who makes the envelopes for the government.

## Technical Section



**A-3. Color reactions of vegetable fibres.** Paper Makers' Monthly Journal, through La Papeterie, **41**, 369-70. (Sept. 25, 1919). A description of some color reactions of cotton, jute, hemp, flax, nettle, broom, reed, hops, lupine, cotton grass, as viewed through the ultra microscope.—A.P.C.

**A-4. 5. French public pulp-testing bureau.** La Papeterie, **41**, 370-3. (Sept. 25, 1919). The French government has just created a national pulp-testing bureau, which will be located at Grenoble. The texts of the decree establishing it and of the regulations governing it are reproduced at length.—A.P.C.

**G-0; K-12. Regulating stock consistency; the Arca regulator.** Paper, **26**, 833-6. (1920). The hand wheel of the stock regulating valve is replaced by a sprocket operated by a chain. At one end of the chain a wt. is suspended, and the other is fastened to a piston in a cylinder operated by water under pressure. In front of the nozzle through which the water discharges from the cylinder is a disc or cup, fastened to a lever arm receiving multiplied motion from a perforated sheet-copper drum, which is placed on the wire directly over a table-roll and as close to the breast roll as the concentration allows. By this location the lagging of the regulator is prevented as far as possible. A change in the concentration of the stock alters the thickness of the sheet, thus raising or lowering the drum, which operates the cup and affects the discharge of water from the cylinder. This in turn operates the piston which thus opens or closes the stock regulating valve. Curves are given to show the results of tests made at one of the largest sulfite mills in Sweden.—A. P. C.

**K-7. Improvements to beaters and refiners.** World's Paper Trade Rev., through La Papeterie, **41**, 363-4. (Sept. 25, 1919). Description of T. N. Nash's patent Eng. patent 6876, 1914, followed by a brief discussion of the claims of the inventor.—A.P.C.

**K-12. The manufacture of crushed straw paper at high speed.** Porphyre, La Papeterie, **41**, 356-9. (Sept. 25, 1919). A description of the first stages in the preparation of the stock, the elimination of the knots and the grinding and refining, followed by a discussion of the relative merits of the cylinder mold and the flat wire for making the paper, the advantages of the latter being greater with a properly prepared stock, especially for heavy paper. (Cont'd.)—A.P.C.

**K-12. How paper is formed on the fourdrinier. Influence of certain conditions in the formation of the sheet.** Papierfabrikant, July 19, 1919, p. 750. Paper, 579-81. 1919. The formation of the sheet is affected by the following factors: (1) Degree of upward or downward inclination of the wire. (2) Height of damming behind the sheet. (3) Speed at which the stuff passes between the slices. (4) Difference in speed between the travel of the wire and the rate at which the stuff flows on. (5) Position of the wire apron. (6) Temperature of the stuff. (7) Degree of greasiness of the stuff. (8) Shake. (9) Length of the pulp fibres. (10) Speed of the machine as a whole. The method of formation of the sheet on a cylinder wire is also described.—A. P. C.

**K-12, 14.—Air conditioning for paper mills.** J. O. Ross, B. F. Sturtevant Co. Paper, 13-9. (June 16, 1920). The moisture content of a sheet of paper depends on the temperature and relative humidity of the surrounding atmosphere. Under given operating conditions the paper coming from a machine has a practically constant moisture content; but the temperature and humidity of the finishing room vary within wide limits. This will affect merely the outside of rolls or packages of paper, thus causing uneven moisture content throughout the paper. This is particularly objectionable for paper that is to be coated. This may be overcome by conditioning the air to a given temperature and humidity. The Sturtevant system of air conditioning is described at some length, together with the principle on which it is based.—A. P. C.

**K-24.—Cutting costs in handling, packing and shipping paper.** N. P. Winchell jr. Paper, **26**, 629-33, 680-3, 730-2, 742. (1920). A description of proper methods of handling paper in the mill previous to shipment so as to eliminate time-loss or labor-loss, showing the advantages of using various types of trucks (elevating trucks, combination truck and tiering machine, motor-driven trucks) cranes, hoists, carriers, conveyors, and showing the proper methods of packing, both for export and domestic trade, so as to obtain economy, safety and compactness. The importance of the selection of the right route and the best method of shipping is discussed.—A. P. C.

**K-0. Papermaking from megasse.** J. Ind. Eng. Chem., **12**, 83. (1920). The remedy for expensive bags is a simple one as there are thousands of tons of sugar-cane waste (megasse) burned or thrown away every year in Queensland and New South Wales. This is one of the very best materials for making paper, corn sacks, and wool packs which latter may be made from paper at 30-40% less than the cost of jute bags. This is a new industry with a great future before it and a company could readily be formed, machinery installed, and in less than 12 months Australia could be supplied with corn sacks, wool packs, binder twines and other articles at a minimum price, and made by Australian workmen.—A. P. C.

**L-4.—Making seamless bags, and envelopes.** Fr. patent No. 502, 185, Torakichi Umeda, Japan, Feb. 16, 1920. Paper, **23**, 103-4. (May 1920).—A. P. C.

**L-4.—Improved drum tester for shipping boxes.** Paper, **22**, (June 23, 1920). Description and illustration of a drum tester which, it is claimed, simulates the handling which a loaded box may encounter in railroad traffic.—A. P. C.

**L-4.—Machine for making paper bags.** Eng. patent. Christopher Handersen, Edinburgh, Scotland, World's Paper Trade Rev. Papeterie **42**, 447. (May 25, 1920).—A. P. C.

**L-7. Jute substitute.** Z. angew. Chem., Aug. 2, 1918; J. Ind. and Eng. Chem., **11**, 244. (1919). Paper yarn of from 1.5 mm. diam. is in use in Germany as a substitute for jute, while paper yarn from parchment paper is woven into belts for drying light machinery. The yarn, when treated with a 1 per cent. solution of tannin, is rendered soft and flexible to the touch and its strength is increased by 49 per cent. The addition

of gelatin gives a hard firm touch to the yarn and an increased strength of 25 per cent. When wet its strength is reduced only 15 per cent. Neutralized aluminum acetate added to the tannin gives the yarn a strong, elastic touch and increases its strength 44 per cent. The average water content of the yarn is about 28 per cent.—A. P.-C.

**M.4.—The making of belt joints and laps.** N. P. Winchell Jr., Paper, 25, 1153-6, (1920). A detailed description of the proper way of making the various kinds of joints and laps in different kinds of belt (leather, rubber, fabric).—A. P.-C.

**N.4. The conservation of coal.** Importance of insulation. Papier, 22, 357, (Dec. 1919). A brief discussion of insulation as applied to boilers and piping.—A. P.-C.

**N.5.—The advantages of pulverized coal.** Jacques Maisonneuve, Papier, 23, 77-9, (April 1920). A brief discussion of the advantages of pulverized coal, together with a short description of the apparatus for pulverizing and burning it.—A. P.-C.

**N.7.—Hydraulic power in France.** Papier, 23, 10-2, (Jan. 1920). A discussion of the new French law relative to the utilization of water-power for industrial purposes.—A. P.-C.

**N.0. Cheaper power available in paper mills.** John F. Ferguson, Paper, 25, 970, (1920). Paper mills could obtain a large proportion of the power they require at a very low cost by utilizing their by-products.—A. P.-C.

**N.0.—Liquid fuel.** J. Micol de Portement, Papier, 23, 4-7, (Jan. 1920). A discussion of the advantages of fuel-oil.—A. P.-C.

**O.2.—Process and apparatus for removing oil from water.** Papeterie, 42, 499-500, (June 10, 1920). The oil is demulsified from the water by means of acetatis hydrate which is precipitated in the oil-bearing water and carries down the oil with it, the water being then filtered.—A. P.-C.

**O.2. Filtration in the paper mill.** Leonce Fabre, Papeterie, 41, 627-31, Dec. 25, 1919. A short description of the Zenith filter and of various types of "save-alls"—A. P.-C.

**P.2. Interesting men in the safety movement.** W. E. Worth, Paper, 25, 575-9, 1919. "Safety first" is a humanitarian movement, but it is also very sound business, as accidents cost a lot of money. To get results it is indispensable to arouse the interest and get the good will of the men. This may be done by means of mixed committees of foremen and workmen, posting accidents on bulletin board, educating the foremen, putting new men on probation, making bulletins interesting, using illuminated signs where possible.—A. P.-C.

**R.1. The paper industry in Czecho-Slovakia.** Jean Dvoracek, Prague, Papier, 23, 91-2, (April 1920). A study of the paper requirements of Teheco-Slovakia before and after the war, and of the ability of the home industry to supply the needs.—A. P.-C.

**R.1.—The paper industry in France.** A. Crolard, Papier, 23, 59-63, (March 1920). 81-7, (April 1920), 117-9, (May 1920). Extracts from the report of Albert Crolard, Deputy, presented to the Congrès National du Livre in 1917, giving a detailed analysis of the position of the French industry as regards its raw materials and equipment, its ability to produce various kinds of papers, and its dependence on foreign countries; together with a brief description of the manufacture of cardboard, fancy paper, and Japanese paper.—A. P.-C.

**R.1.—Developing and organizing a modern pulp products mill.** Paper, 17-9, 34 (June 23, 1920). A description of the growth of the Eddy mills, Hull, Quebec.—A. P.-C.

**R.2. Contribution to the history of paper-making in France.** H. F. La Papeterie, 41, 350-3, (Sept. 25, 1919). An outline of the evolution of the paper guild and the "union" of papermakers during the 17th and 18th Centuries, and of the royal edicts which were promulgated concerning the industry.—A. P.-C.

**R.2. Contribution to the history of paper-making in France.** III. H. F. Papeterie, 41, 492-5, (Nov. 10, 1919). Notes on the paper trade in France up to the beginning of the nineteenth century. (Cl.)—A. P.-C.

**R.3.—Applying scientific management to industrial administration.** J. Wm. Schulze, Paper, 15-6, 30, (June 2, 1920), 15-6, 34, (June 9, 1920), 24, 28, 30, (June 16, 1920). How to apply planning to administration to properly coordinate the motives of an organization as established by the administration with the workers, materials, equipment, working space, and management to secure maximum results.—A. P.-C.

**R.5. The pulp and paper industry in Czecho-Slovakia.** J. Micol de Portement, Papier, 22, 345-6, (Dec. 1919). A discussion of the present status of the industry and of the advantages to be derived by the French industry by dealing as much as possible with the new republic.—A. P.-C.

**R.5. Japan's position in the paper industry.** J. P. Suzuki, Industrial Japan; World's Paper Trade Rev., Dec. 12, 1919; Paper, 25, 925, (1920). A brief review of the development of the paper industry in Japan and of its present status.—A. P.-C.

**R.5.—The French paper industry.** Lucien Chassaigne, L'Exportateur Français; Papier, 23, 105-6, (May 1920). A discussion of the dependence of the French paper industry on foreign countries, and of the means to be taken to supply its needs from the Fr. colonies.—A. P.-C.

**R.5.—Rapid growth of woodpulp and newsprint production in Sweden.** Walter H. Sholes, U. S. Consul, Paper, 16, 26, 30, 32, (June 23, 1920). An analysis of the present situation of the Swedish pulp and paper market.—A. P.-C.

**R.7. Industrial organization and salary scales.** Papyrophile, La Papeterie, 41, 346-9, (Sept. 25, 1919). Any system, no matter how perfect it may seem, is bound to fail if applied inconsiderately, without due regard for the particular circumstances of each case to which it is applied. In the paper industry, if the premiums system is to be applied, it must be done in such a way that quantity will not be produced at the expense of quality; but both should concurrently be maintained as high as possible. The system should be studied with this end in view, and should be explained to the workmen to show them it is to their advantage to turn out quality as well as quantity. Examples are given of the way in which such a system could be applied in a paper mill.—A. P.-C.

**R.12.—The distribution of general expenses to arrive at costs.** L. Dupuy, Mon Bureau; Papier, 23, 107-8, (May 1920). A discussion of the importance of a proper distribution of general expenses, especially during periods of industrial crisis.—A. P.-C.

**R.13.—Convention of the American Pulp and Paper Mill superintendents.** Paper, 26, 873-4, 900, (1920). A brief account of the convention held in Buffalo June 4th and 5th, 1920.—A. P.-C.

# PULP AND PAPER NEWS

L. B. Holliday & Co., have moved their dyestuff business in Montreal to No. 27 St. Sacrement St., where they have established a laboratory in charge of a competent staff and are ready to undertake problems of color matching and research.

A visitor to Toronto during the past week is Mr. Theo. Feilden, editor of the Empire Mail of London and director general of the Imperial Trade Propaganda Organization. This journalist is collecting data on financial, commercial and industrial phases of Canadian life which will be used as a basis of efforts to extend trade between the United Kingdom and the Dominion.

Notices of the annual meeting of the Spanish River Pulp and Paper Mills, Limited, to be held at the head office in Toronto on Sept. 30th next, have been sent out. The annual statement will be mailed to the shareholders in a few days time and it is expected to show that in the fiscal year ended June 30th an increase of close to 47,000 tons of newsprint, ground wood, sulphite, board and wrapping paper combined, over the output of the previous year. Newsprint will show an increase of 21,000 tons owing to the installation of an additional machine at Espanola. Secretary J. G. Gibson states that the company has been held up somewhat on part of the equipment for the Sturgeon Falls machine and that it will be the first of the year before the machine is in operation.

A visitor to Toronto this week was Mr. Robert Sweeney of Vancouver, one of the directors of Western Canada Pulp and Paper Company. Mr. Sweeney states that good progress is being made with the installation of the new digester and it is expected that it will be ready to operate in about a week's time. The new digester will double the output of the plant to 40 tons per day of sulphate pulp and kraft pulp. In addition lumbering operations are being carried on. The market for British Columbia lumber, Mr. Sweeney stated, was showing some improvement.

According to information made available this week the net profits of the Provincial Paper Mills, Limited, for the year ended June 30th were \$643,807 as compared with \$335,128 for the same period of the previous year. The profits mentioned did not allow for depreciation or war tax. The stock of Provincial Paper is closely held and the rapid advances in the market would indicate that there is a very small floating supply.

Mr. Alex Buntin, head of the Buntin Reid Co., Ltd., Toronto, has returned from a couple of months outing spent at Murray Bay.

The Waterous Engine Works, Company, Limited, of Brantford, report that they have booked the following orders: ten 84" wet machines for the Management Engineering and Development Company of Dayton, Ohio, for Fort William; six Quiller screens for Price Bros., Ltd.; ten plate flat screens for Mattagami Pulp and Paper Co.; sixteen 10-plate flat screens for the Toronto Paper Co., Ltd. at Cornwall. They are also busy

on several orders for Voith magazine pulp grinders.

Mr. V. T. Haney, Toronto representative of the Rolland Paper Company, Limited, spent a few days in Montreal with the firm this week.

Mr. N. L. Martin, secretary of the Canadian Paper Trade Association is busy arranging for the annual meeting of the organization to take place in Toronto at the end of this month.

Mr. Irwin Proctor, President of the Canadian Aero Film Company, Limited, has just returned to Toronto after an aeroplane flight over the northern portion of the province, which was taken at the request of the Government in order to get photographs of the country from an agricultural and forestry viewpoint. The photos will be exhibited at the National Exhibition. The aeroplane travelled north to Hudson's Bay, passing through Algonquin Park, and carried six men. Mr. Proctor stated that from his observation on the trip he concluded that Ontario has the finest reserve of spruce pulpwood in the Dominion.

The timber problem which has been in progress at the Ontario Parliament Buildings in Toronto for some days past came to an unexpected termination this week the Crown counsel, Mr. R. T. Harding, having suffered a fractured arm when he fell from an apple tree at his home at Clarkson's. Adjournment was made until September 7th.

The Newmarket Express recently celebrated its silver jubilee. The paper has of late years made good progress under the able and energetic direction of the present editor, Mr. J. F. Harvey.

Simcoe and York County publishers have adopted the two dollars a year subscription rate owing to the increase in the cost of newsprint and other mounting expenses.

Mr. E. S. Hoyt, who has been some years with the International Paper Company, arrived at Iroquois Falls, Ont., last week, where he will have the management of the townsite, hotel and camps for the Abitibi Company, Limited. He was accompanied from Montreal by Mr. L. R. Wilson of the Montreal office.

Word has been received in Toronto that the Dominion Pulp Co., Limited, of Chatham N. B., a concern incorporated under the laws of the United Kingdom, has gone into liquidation. The company did business in Chatham, manufacturing unbleached sulphite. No information is available in Toronto as to what disposition is to be made of the company's plant.

It was the plant of the Dominion Pulp Co., at Chatham that was recently reported bought by Fraser Co., Limited.—Ed.

Mr. William Gorman, Montreal representative of the Provincial Paper Mills, Limited, was a visitor at the head office in Toronto this week.

Supplementary letters patent have been issued increasing the capital stock of the Fort Francis Pulp and Paper Co., Fort Francis, Ont., from fifty thousand five hundred shares of one hundred dollars each.

The tremendous expansion of the pulp and paper mill industries in Ontario and Quebec has brought to one concern at Galt, Ont., industry orders for freight elevators. Three of the largest companies have placed orders with the Roelofs Elevator Company of that town and the factory is busy on these orders as well as others from the north country, with the prospect of further business from the same quarter.

Mr. A. P. Costigane, Secretary of the Ontario Pulp and Paper Makers' Safety Association, Mr. J. N. Stephenson of the Pulp and Paper Magazine and Mr. George Carruthers of the Interlake Tissue Mills, Limited, attending the meeting of the joint committee on Education from the Canadian Pulp and Paper Association and the committee of the American Technical Association at Saratoga Springs this week. Mr. Carruthers is chairman of the joint committee.

Many Canadian boys have gathered at Canoe Lake, Algonquin Park, where a school of woodcraft is being conducted under the auspices of the National Boys' Work Board. Instruction is being given the boys by prominent workers from Toronto and other centres.

The Provincial Paper Mills, Limited, held its quarterly meeting of shareholders last week when it was announced that hereafter the shareholders would receive their regular dividends in New York funds, which means a bonus of about thirty per cent according to the present exchange rate. The company declared a bonus of one per cent on the common stock in addition to the regular quarterly dividend of one and a half per cent.

A visitor to Toronto a few days ago was Mr. H. R. MacMillan, of the MacMillan Export Company, Vancouver, who reports that the coast province is making great strides in the pulp and paper line and that many new companies are in process of formation out there. It was stated that several valuable timber lands have changed hands recently at good figures, the capital coming chiefly from the United States. The usual difficulty in the way of securing equipment exists in the west, says Mr. MacMillan, which is proving a drawback to the development of the industry.

A small pulp mill is to be erected at Nelson, B.C., at the cost of \$500,000. An engineer and mill manager have been engaged and pulp wood for the plant will be secured from local ranches, according to a CRR news report.

It is stated that present time immigration averages about 18,000 per month and of this number approximately 12,000 come from the British Isles and 6,000 from the United States. Last month out of 12,500 from the British Isles, 8,000 were English, 3,000 Scotch, less than 1,000 Irish, and 150 Welsh.

Fort William, Ont.—The plant of the Nipigon Fibre and Paper Co. which is in course of erection will have an average output of 40 tons per day, which it is expected will be increased to 160 tons within the next couple of years.

Fusilier, Sask.—A twenty ton plant for the production of the sorium sulphate deposits here is now under construction by the Wm. Livingston Corporation, the sum of \$20,000 being spent on the operation.

#### SCOTCH FORESTER IN CANADA.

Mr. P. Leslie, of the Forestry Dept., University of Aberdeen is making a tour of Canada to get in touch with forestry conditions, and especially with tree planting operations. He reports one Scotch Nursery with 40,000,000 seedling.

#### LAURENTIDE CO. ASSOCIATED MATCH PLANT.

An important industry in the form of a \$5,000,000 match factory will be developed shortly in this country, according to an announcement made by Sir Alexander A. Maguire who represents the English firm of Maguire, Paterson & Palmer, Limited. The plant in Canada will follow the plans of the new plant recently located at Garston, Liverpool, which will operate next month. This plant is erected on a 45 acre site and employs two to three thousand hands and has a capacity of 100,000 gross per week. It is proposed to make a practical duplication of this factory in Quebec and a site has already been chosen. Mr. Maguire was attracted to the Province of Quebec from its raw material and the excellent power facilities that are offered in several vicinities.

It is announced that the industry in Canada will be in charge of a directorate of 12, 6 of whom will be Canadian and that of the latter Sir Lomer Gouin and George Chahoon, President of the Laurentide Company, are the first to be chosen. The president of the company will be Sir Alexander Maguire, who with his father before him has been associated with that trade for some 75 years. M. C. Small, of the Laurentide Company, will take charge of all the timber operations for the new match company. Sir Alexander states that an endeavor will be made to build up a large export business, as matches of all kinds will be made to suit any market in the world.

Pulp and paper circles look upon the new industry as important from the subsidiary standpoint, and as likely to be of special advantage to the Laurentide Company. The raw material for the matches will be the pine which is not used in ordinary pulp which the Laurentide Company does not produce. It is pointed out also that the latter mill produces box board, which would be used in large quantities by the match mill, and indeed this might easily take the whole production of the Laurentide box-board plant.

#### THE SPITTING HABIT.

When one wants to achieve something he must keep constantly at it, not overlooking the fact that constant reminders are a necessity.

In going around our plant with a party of members from the Chemical Industries our attention was drawn to the habit of spitting on the floors in our plant.

We are glad of the opportunity to bring before you some of the consequences of this bad habit.

You are all aware that tuberculosis, the white plague, kills in our country an enormous amount of people.

Not every one of these victims is predisposed through heredity.

There are among every one hundred men, two men that suffer from tuberculosis.

Some of those men will expectorate on the floors of the mills and there the microbes will be set free to roam about the factory and settle in the lungs of some man whose physical condition is not normal.

What will the consequences be? In the case of a weak constitution the microbes thus circulated in the air will play havoc with the lungs of the unfortunate man and if not caught in time he is doomed for an early death and becomes another disease carrier.

Posters on our bulletin board have shown you the danger and the consequences of spitting on floors; and we thought that a little reminder just now was in order to refresh the memories of all.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Aug. 28. Two factors which are not calculated to improve the pulp and paper situation any developed this week. One of these was the difficulty being encountered by the mills in the Ottawa Valley through lack of water supply and the other is the promised freight increases. Freight increases in the United States went into effect this week and it is thought likely that the Canadian roads will get away with their demands and that the pulp and paper manufacturers also the jobbers and consumers will be up against conditions shortly that will make for still higher prices in all paper commodities. The manager of one of the big Toronto paper distributing houses told the Pulp and Paper Magazine that he was already basing all his quotations on the freight increase and that this factor sooner or later was bound to reflect itself in price advances all along the line. Already the mills are groaning under the high prices for raw material and are glad to get pulp at almost any price and this condition has existed for months past. One Toronto mill representatives went forth this week with instructions from the office to dig up some groundwood pulp somewhere and after an absence of several days, in which he visited every available source of supply, he returned without having negotiated a ton—and this despite the fact that he was authorized to pay \$160 a ton for it, rather than lose it. The fact is that the product is not in the open market. By the time the mills look after their commitments there is nothing left for the chap who hasn't bound the mill for a supply by contract. The market price for groundwood pulp is from \$140 to \$150 and rumors that an odd lot or two was picked up at \$160 could not be verified, although there was \$160 waiting any dealer who could have supplied the Toronto firm in question in its emergency. Pretty much the same conditions exist in chemical pulp lines, very few sales of sulphite having been made during the week.

### News print is short

The clamor for newsprint continues and everyone is short of the commodity. While the publishers are being pretty well looked after as a whole, the jobbers are unable to get newsprint for stocking purposes and the few reams of flat news that reach the warehouses are quickly picked up, frequently at 11c a pound. With some of the mills paying as high as \$20.00 a ton for coal during the present coal crisis and others facing lessened production owing to low water, there does not appear to be any relief from the stringency of supplies either in newsprint or any other paper line and the public is steeling itself against the coming shock of further increases in price.

### Bonds going up.

Although the effect of increased freight rates, big coal bills at the mills and threatened power shortage has not been visible on the buyers as yet, there is a hint that the cheaper grades of bonds are about to take a jump and jobbers are preparing themselves for this eventually which they say may come any day now.

### Book Papers.

None of the mills at the present time will take

orders for book papers for delivery before January next and in the meantime orders that were due for shipment in August have been put off until September, the reasons given relating chiefly to the great shortage of raw stock, which has hampered the mills in their production. Toronto houses have handled a considerable tonnage, but most of it was for shipment to printing houses for big jobs of a special character, orders for which were placed many months ago. No stock of book papers is available for what might be termed the transient trade. Supplies of coated board are very meagre and there is practically none on the market.

### Printing Trade Dullness.

Already there are signs that the dullness in the printing trade, consequent upon the vacation period, is drawing to a close as evidenced by the resumption of enquiries for stock. Notwithstanding this, however, a quiet period seems to have set in in the lithographing trade, one man in the business making the statement that not for five years past had there been such a slackening off in that line of business. It is stated that there is a disposition to cut down on catalogue work owing to the high prices for paper and that some firms have already adopted a policy of curtailment in their output of advertising matter.

### Blotting papers are scarce.

Jobbing houses report that it is next to impossible to get shipments of coated blotting papers, although there is a great demand for it. As yet none of the Canadian mills have undertaken the manufacture of this line, the machines having been kept at capacity on the standard lines. It is stated, however, that the Howard Smith people will be the first to enter the blotting paper field, although this does not appear to be very imminent.

### Conditions Abroad

While it is recognized that the condition of the Canadian pulp and paper market is bad in respect to supply and demand some consolation may be had from the fact the paper trade across the line is in worse straits than in this country, while in England pretty much the same situation exists. A circular received from a British house by a Toronto representative, states that the position of the paper market in England is a very strange and difficult one. On the one hand the British trade is faced with the fact that the home trade buyers are reluctant to place orders, trade generally being rather quiet, while on the other hand mill prices of papers are still firm and likely to advance further. The British firm referred to recently had reports from two reliable mill agents just back from Scandinavia and both agree that mills are still getting plenty of orders from all over the world and that prices for pulp are so high that paper prices must keep up. The circular goes on to say: "As an instance of what mills are asking we may say that the present best making price for 277 tissue is £160 per ton, which is equivalent to 8.9d per ream. Tissue costing 8.9d obviously cannot be sold under say 10.6d, so that further advances must inevitably be made shortly.

There is no doubt, however, that in the present





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**SOLE AGENTS in the United States, Canada, Mexico and Cuba for  
Finnish Cellulose Association, Helsingfors, Finland**

comprising all and every Sulphite, Sulphate and Kraft pulp mill in Finland. Manufacturers of superior grades of Bleached and Unbleached Sulphites, Easy Bleaching Sulphates and Kraft Pulp.

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**SOLE AGENTS in the United States, Canada, Mexico and Cuba for  
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a combination of the foremost Ground Wood Pulp and Board Mills in Finland, makers of various kinds of boards and dry and wet Brown and White Mechanical Wood Pulp.

Get the most for your money by getting next to our qualities and prices!

**WOOD**  **PULP**

**Lagerloef Trading Company, Inc.**

**18 East 41st Street, NEW YORK, N. Y.**

Telephone: Murray Hill 4246-47  
" " 2170

INQUIRIES SOLICITED.

state of trade buyers are nervous, and, however, convinced they may be that prices will go higher, they will not buy unless actually in need of goods. Agents should therefore not be discouraged by the present temporary lull in business, but work patiently and wait for the revival when stocks are reduced. Each fresh consignment arriving costs more, so that our prices must go on advancing. By September prices must be from 10 to 20 per cent higher, and by November 20 to 40 per cent higher.

**Rag and Paper Stocks.**

The outstanding feature of the new cotton cuttings market was the fact that there were slim offerings available at current prices due to the curtailed production at white wear manufacturers. Paper mills continued to inquire for stock, though for rather small quantities.

Roofing rags, bagging and thirds and blues continued weak, with little demand from consumers.

Hard and soft shavings showed a slight advance under continued inquiries from mills. Newspapers are in good demand and the price, while not advanced, will no doubt increase shortly, following high prices now prevailing in New York for this grade. Mixed papers continue firm with numerous inquiries from mills not usually users of this grade. The scarcity of ground wood pulp has forced some mills to turn to mixed papers to replace pulp. There is no doubt that the next few weeks will see a sharp advance in this grade, in fact unless there is a marked increase in the production of both chemical pulp and ground wood, all grades of waste paper will reach new high price levels.

Per Cwt, F.O.B. Toronto

No. 1 shirt cuttings . . . . .	\$21.00—\$22.00
No. 1 unbleached cotton cuttings . . . . .	\$16.50—\$17.00
No. 1 fancy shirt cuttings . . . . .	\$12.50—\$13.00
No. 1 blue overall cuttings . . . . .	\$11.50—\$12.50
Bleached shoe clip . . . . .	\$15.50—\$16.00
White cotton hosiery cuttings . . . . .	\$16.50—\$17.00
Light colored hosiery cuttings . . . . .	\$13.00—\$14.00
New light flannellette cuttings . . . . .	\$12.50—\$13.00
No. 2 white shirt cuttings . . . . .	\$13.00—\$13.50
City thirds and blues (repacked), No. 15.	\$3.75—\$4.00
Flocks and satinettes . . . . .	\$2.00—\$2.25
Tailor rags . . . . .	\$2.00—\$2.10
Gunny bagging . . . . .	\$2.00—\$2.25
Manila rope . . . . .	\$6.00—\$6.50
No. 1 white envelope cuttings . . . . .	\$7.75—\$8.00
No. 1 soft white shavings . . . . .	\$6.75—\$7.00
White blanks . . . . .	\$5.50—\$6.00

Heavy ledger stock . . . . .	\$3.75—\$4.25
No. 1 magazine . . . . .	\$3.50—\$3.60
No. 1 book stock . . . . .	\$2.75—\$2.90
No. 1 manila cuttings . . . . .	\$5.00—\$5.25
No. 1 print manila . . . . .	\$2.25—\$2.50
Folded news . . . . .	\$2.25—\$2.35
Over issue, news . . . . .	\$2.50
Kraft . . . . .	\$5.25—\$5.50
No. 1 clean and mixed papers . . . . .	\$2.10—\$2.20

**NEW YORK MARKETS**

New York, August 28.—The paper market continues to show the effects of the gradual termination of the vacation season. Demand from various quarters is beginning to broaden to a noticeable extent and the situation is rapidly taking on characteristics for the early autumn. Consumers of paper are inquiring around the market getting a line on supply conditions and learning at what prices paper can be obtained. That the forthcoming fall season will prove to be one of the busiest ever experienced by the paper trade in the States seems assured. On every hand there are indications of banner business a little later on. The consumption of paper of various kinds is abnormally heavy and promises to increase as business generally becomes stimulated following the dull summer period. Manufacturers and jobbers are getting themselves and their stocks in trim for what they confidently expect will exceed in measure of trade activity every busy period they have passed through in the past. There is a very firm tone to prices in all corners of the market. Paper values today are based largely on matters of delivery; premiums are being readily granted for spot shipments, and the trade looks for this condition to become accentuated as the demand expands.

Looking about the principal consuming trades, one finds conditions obtaining that seem to make sure an exceedingly active fall is ahead for the paper industry. Printing shops in New York are nearly all operating on a double shift basis; there is scarcely a one that is not working a night force, in an effort to take care of all the business coming their way. One reason for this activity is that many commodity lines are comparatively slow at present, with the result manufacturers and retailers are conducting numerous and more extensive canvassing campaigns, thus affording a great amount of work for printers. This obviously makes for a large consumption of paper, particularly of bond and ledger variety. Paper box establishments in this vicinity are busily engaged. Box consumers are placing

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We buy all kinds  
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**WOOD PULP**

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Write us and be  
Convinced.



# GIVE THIS “WORLD” VALVE AN “ACID” TEST

It is especially made to resist the effect of acids used in a pulp mill. It will emerge triumphant from the severest test you can give it.

T. McAvity & Sons make a greater range of valves, fitting and castings, of acid-resisting bronze than any manufacturer in the Dominion.

Designed to give a maximum of wear, the thickness of the backs of the elbows, throats of valves, and any point where the acid wears excessively, are reinforced.

Superintendents of the largest pulp mills in Canada endorse their use. No other metal will stand the acid test as will “World” bronze.



## T. McAVITY & SONS, LIMITED

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VANCOUVER,

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HARVARD TURNBULL &amp; COMPANY, 207 Excelsior Life Building

orders against fall requirements and the box plants are rushed to turn out enough containers to meet the demand. Everything points to a further expansion in demand for boxes as the season wears on. Department stores are doing a large business, and of course are using great quantities of paper. Activity in the publishing field is just as brisk as it has been at any time during the remarkable period of the past few months. Advertising in the daily newspapers has dropped off somewhat, as it invariably does in the summer, but magazine and book publishers are receiving more advertising than they have paper to print on. Moreover, there is no visible sign of the advertising boom letting up. Rather, if there is enough paper to cover the requirements of publishers, there is no telling to what extents the consumption of book and printing papers will likely reach before the end of the current year.

Prices on all grades of paper hold firm to strong. There are still more buyers in the market than sellers. The latter seldom have to look for business; it comes to them in greater volume than they are able to comply with. With paper supplies, if anything, growing lighter, it appears that the market will become even tighter as regards available tonnages of paper than existed last spring. If such developments, higher prices are inevitable, for consumers today do not let matters of price bar their way to filling their wants; the one idea under prevailing circumstances is to get paper, cost what it may.

There is no important change in quotations. The tendency is distinctly upward and revisions in prices are seldom, if ever, other than higher. Jobbers are making pressing demands on mills for supplies, both for immediate delivery to customers and in an effort to secure stocks for the expected increased demand from consumers later on.

**GROUND WOOD**—Ground wood is being readily absorbed about as quickly as it becomes available. Few sizeable tonnages are offered, however, and the lack of unsold pulp naturally places a damper on trading. There is a large potential demand remaining unfilled. Pulp manufacturers cannot begin to satisfy the wants of all their customers simply because demand is running so far beyond normal that mills are unable to produce enough pulp to go around. From all reports the pulp situation, as regards supplies, should improve at least somewhat during the next few months. The high prices obtainable for pulpwood are said to be serving as a lure for increased production in cutting regions, and if grinders can get more timber transported to their plants the probabilities are greater amounts of pulp will be made. At present, however, the market is practically bare of unsold accumulations of any size and buyers have extreme difficulty in locating tonnages for sale. Prices range between \$110 and \$150 per ton for spruce pulp of prime quality, and lots for spot delivery are frequently bringing higher figures than these.

**CHEMICAL PULP**—Although the chemical wood pulp market displays no change of importance, prices holding firm at about previous levels and demand running along the same even keel as before, there is a noticeable pick up in inquiry, which indicates that consumers are beginning to pay more attention to future requirements. Pulp reaching the market soon is absorbed and there are no visible means of telling whether supplies have increased. Trade factors assert

that pulp is equally as hard to buy in sizeable amounts today as at any time this year. Probably some manufacturers have succeeded in laying in stocks during the summer lull but they are holding supplies with pointed firmness, reflecting the general belief that a more pronounced scarcity and higher prices are in view for the fall. Current offerings of spot quantities of any grade seldom involve more than a carload or two at a time and the prices named are invariably at the upper edge of quoted values. It is stated on high authority that some consumers are placing contracts for domestic bleached sulphites for fall delivery at a price to 12 cents per pound. Spot lots are freely selling at this level and higher. Newsprint sulphite is moving steadily at quotations of around 8.25 cents on spot parcels and beyond 7 cents on contracts.

**RAGS**—A fair measure of activity marks trading in papermakers' rags. Mills are still buying cautiously in an effort not to stir up the market and run prices up against themselves, and no broad fluctuations have developed although there is a strong advancing tendency apparent. New cuttings are in light supply and are bringing unprecedented prices. New white shirt cuttings of No. 1 quality have sold at 25 cents per pound in some cases, and dealers are talking of a 30 cent market, it being their contention that with clothing manufacturers producing fewer of these rags and with paper mills consuming relatively more because of the bleaching situation, values will certainly undergo further enhancement. There is a better demand for roofing rags, which are selling at between 2.25 and 2.50 cents a pound at shipping points for No. 1 packing, most buyers paying a lower figure. A strong factor in this branch of the market is that the decline in prices here during the past several months has cut short the importation of roofing rags from Europe, with a resultant lessening of supply for mills to draw on. Old whites are quotably firm and are moving in fair amounts toward mills.

**PAPER STOCK**—Waste papers are meeting with a ready sale and there is a firm tone to quotations. Box board and other consuming mills are purchasing in a cautious manner, taking only such tonnages as are required to keep them immediately supplied, yet the movement is large enough to prevent any large accumulation, thus bearing out the contentions of dealers that they are not getting as much old paper from producing sources as ordinarily. Fine grades of paper stocks are decidedly hard to locate in sizeable amounts. Hard white shavings are selling at 8.50 to 9 cents per pound and soft white shavings at as much as 8 cents. Folded newspapers continue to be actively sought and are being absorbed by board plants, as well as newsprint mills for de-inking purposes, at a price basis of around 2.10 cents f.o.b. New York No. 1 mixed paper is selling at 2.10 cents and in some instances at beyond this level. Old magazines are coming in for more notice and mills are buying at 3.50 cents or a shade lower at shipping points.

**OLD ROPE AND BAGGING**—There is a moderate demand from paper mills for old rope and prices rule stationary at the recent decline. Manila rope of No. 1 quality commands 6.25 cents per pound, with good-sized lots available and with some consumers buying at a trifle less. Old bagging is going abegging and is offered freely at 2.50 cents per pound for No. 1 scrap.

### POLAND'S PAPER INDUSTRY

**Paper her biggest asset — can supply products for  
Which world clamors — has many factories.**

While the world is clamoring for news print and is eyeing with some concern the ever-dwindling supply, compared with the ever-increasing demand a voice of hope comes from a country which perhaps, needs hope itself more than any other— war stricken Poland, begins an article in the Fourth-Estate.

There is no dramatic flourish in the brief resume of the Polish paper resources contained in the Polish Economic Bulletin. The drama in the situation is one of trade and commerce made possible when a sorely tried nation finds itself in possession of something all the world will buy.

Here are the facts as published in the Bulletin:

The paper industry is well developed in the Provinces of the Kingdom of Poland in Galicia, and has very great possibilities of development. There are many very important paper factories in Upper Silesia, the early output of which amounts to almost 70,000,000.

The Polish paper industry proper consists of great enterprises, with a working capital of 100,000,000 marks. In 1913 there were in Poland nineteen paper factories and 20,000 work-people employed. The produce consists of almost all varieties of paper.

Galicia is in a much better situation than the Kingdom of Poland itself, as she has more woods and quick rivers.

But behind these industrial facts is the circumstance that Poland's paper industry is generally speaking, dependent upon rags, wood pulp and cellulose.

In former days a large quantity of cotton rags was imported from Germany, and flax and hemp rags from Russia because the domestic supply was inadequate. It is believed that these sources may again be drawn upon at an early date, though, of course, that development is a matter of peace and war and the political adjustment of eastern-central Europe.

#### Wood Pulp Outlook Favorable.

The outlook in wood pulp is much more favorable, for the average annual output of this article is 288,000 hundred weight, valued at approximately \$130,000. At the same time a certain amount of wood pulp is imported into the Kingdom from Lithuania and other foreign countries, but at present, it is estimated, nearly half the amount so imported, can be supplied by Province of Galicia.

To an industrial situation already fraught with great natural possibilities, has been added, by action of the Peace Conference, the additional advantages conferred through the free port of Danzig. The influence of that port upon the cost of importing wood pulp from the northern countries as well as from the Baltic is expected to bring about a great reduction in the cost of production.

Wloekawek boasts the only cellulose factory in the Kingdom of Poland, but this one has a yearly output of approximately 225,000 hundred weight. There are two in Upper Silesia in the District of Opole. In Galicia there are three big factories located at Czerlany, Sasso and Zywiec. Nearly half the production of these factories was exported to Austria, eastern and western Europe, Balkan states, Turkey, and even to South America.

In the Kingdom of Poland eleven factories are working at present, and their output amounts to 20 per cent of the amount of paper manufactured before the

war in this part of Poland. In order to help the other industries build up on the paper supply, the Polish Parliament was lately obliged to suspend for three months the tariffs of paper (raw material) imported to Poland.

The situation is improving gradually, and the Polish paper industry has now monthly output of ninety-five wagons (evidently "earload," capacity not known, but small.—Ed.) of printing paper, of which twenty-five wagons might be exported. Very soon the output of this kind of paper may be increased to 110 wagons, and after Silesia is united to Poland the printing paper will constitute a large article of the export trade. West Prussia and Tosmania may develop their own industry if only the conditions of transport are improved by the new Polish Government, a measure already under contemplation.

#### YOUR VALUE.

From your neck down is a distance of about five feet. That part of you is bone and muscle.

From the neck up, the limit of your worth is the sky. For you are paid not for your work, but for what you think while you work.

A lively dance, a swell meal, a tummy full of utter satisfaction, and fine clothes are all pleasures—of a certain sort.

But the man who gets his thrills from the neck up — he's living.

The man who works from the neck up — he's working and can draw real money for it!

Work with your brains, brother! You've got 'em. Trot 'em out and train 'em to work for you like your hands and feet! Then your limit is the sky!

## The Pulp and Paper Trading Company

21 East 40th Street, NEW YORK

Dealers in domestic pulp—chemical and mechanical  
—and paper.

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**J. & J. Rogers Company**  
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**Canadian Kraft, Limited**  
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DEALERS IN

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**Bleached Cotton Hull Fibre Pulp**  
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**Port Huron Mitscherlich Sulphite**  
Made by the PORT HURON SULPHITE and PAPER CO  
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# THE ELECTRIC DRIVE IS HERE!

Both for New and Old Machines.  
It will be permanent. *Ask Us.*

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DELAWARE

Water Tanks  
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Manufactured from best  
quality B. C. Fir in the  
finest factory in Canada

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"CAPITAL" Wires are Good Wires

We solicit a trial order

## The Capital Wire Cloth & Mfg. Co., Limited

*Manufacturers of*

Fourdrinier Wires

—and—

Paper Mill  
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of every description

222

DANDY ROLLS and  
CYLINDER ROLLS  
repaired and recovered

OTTAWA, - - - - Canada

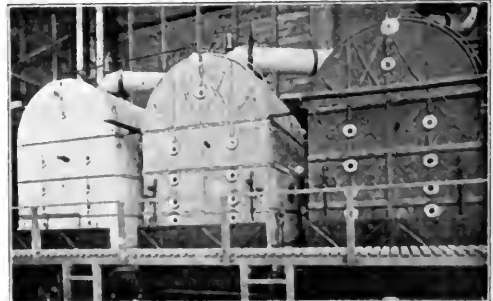
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DIFFUSERS                  DISC EVAPORATORS  
PULP DIGESTERS            MELT TANKS  
CAUSTICIZERS              INCINERATORS  
ETC.

## BOILERS

SCOTCH MARINE            RETURN TUBULAR  
VERTICAL

Western Agents for  
SWENSON EVAPORATOR CO.  
OF CHICAGO, ILL.



"Triple Effect Evaporators made and installed by us in the new Sulphate Mill at Beaver Cove, B.C."

2  **VULCAN IRON WORKS LTD**  5  
VANCOUVER, B.C.

# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., Sept. 9th 1920.

No. 37

## TABLE OF CONTENTS

<b>Editorial:</b>	
Our creed .....	937
Crowding conventions .....	937
Cobwebs .....	938
<b>Special Articles:</b>	
The mullage of parchment pulps .....	939
A new felt cleaning device .....	943
A new test for lime and cement bag paper .....	947
Pulp and paper exports more than doubled .....	948
<b>Miscellaneous Information:</b>	
The U.S.A. forest policy—a book .....	942
Nova Scotia had first newspaper in Canada .....	942
Review of recent literature .....	952
Facts about Alaska .....	960
<b>News of the Industry:</b>	
Location of new Manouan mill .....	944
John MacFarlane was 79 years old .....	946
News from Norway .....	946
Characteristic of the Colonel .....	946
Liverpool lacks news .....	949
Pulp and paper at the National Exhibition .....	949
British trade news .....	950
United States notes .....	951
Pulp and paper news .....	954
Paper bag plant at Winnipeg .....	955
Trade opportunities .....	955
To make abrasive papers in B. C. .....	955
<b>The Markets:</b>	
Canadian trade conditions .....	956
U. S. paper production up 22% .....	956



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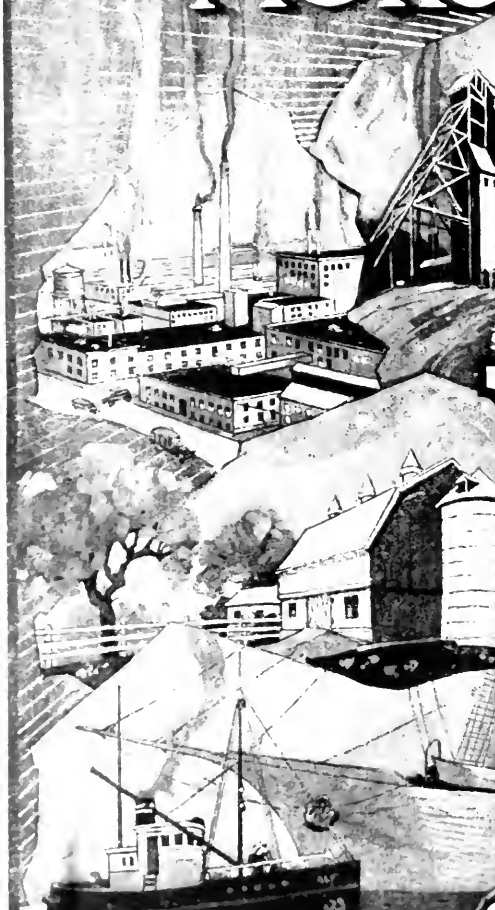
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# EDITORIAL



## OUR CREED.

In spite of the contrary assertions of our worthy advertising manager, we have proof that other parts of the Pulp and Paper Magazine are occasionally read. A few weeks ago we quoted the creed of the Canadian Fisheries Association and suggested that the paper and pulp industry had just as good reason to make a declaration of faith. Dr. C. D. Howe, acting head of the College of Forestry at the University of Toronto, read our editorial and submits the following creed. It is interesting that he makes a reference to agriculture which is very similar to an expression on this page last week. We commend Dr. Howe's beliefs to the earnest consideration of our readers:

We believe in a wholly softwood forest.

We believe in fir, pine and spruce, and that the greatest of these is spruce.

We believe our country has the largest and most prolific pulpwood producing forests in the world.

We believe the forest is not dead, inert material like a mine, but is a living growing thing that can be continuously utilized and at the same time continuously restored to productiveness.

We believe the lack of conscious effort in forest culture and forest protection will in the end be quite as disastrous to our country as the lack of similar effort in field culture.

On the other hand, with the application of intelligent methods of conservation and recuperation, we believe our forests could supply the wood-pulp and paper requirements of the world.

We believe in the development of home industries and therefore that it is unwise, illogical and uneconomical to allow the exportation of raw materials in large quantities from our country.

We believe in the power of falling water, and we believe its power should be greatly extended throughout our land that we may be less dependent upon the indirect source of power imported from without our borders.

We believe that the power of falling water and the power of forest growth are the Twin Genii of our industry, and that the one waxes or wanes with the other.

We believe in up-building in all our endeavors, not in tearing down, and hence that it profiteth neither men nor nations to tear down what they cannot replace with better.

We believe in Canada.

We believe in ourselves.

We believe in the quality of our products.

We believe the blessings of our fellow citizens, the blessings of our children and of our children's children for all time will rest upon those who accept this Creed—and act upon it.

## CROWDING CONVENTIONS.

There may be places just as good, but it would not be possible to find a better place for a convention than Saratoga Springs and the Upper Hudson Valley, where the Technical Association of the Pulp and Paper Industry met last week. The editor had the misfortune to be obliged to leave before it was all over, but had a very happy and enjoyable day and a half. On Wednesday we had a business meeting in the morning and listened to some very interesting papers in the afternoon. The entertainment and program committees must have tried to see which could do most for their guests, for the program ran ~~on~~ till after five o'clock, while the sight-seeing tour started at four. The relative attractions seemed about equal, from the large number who stayed at the Casino to hear the papers, some of which appear in this issue. Others will follow.

In the evening, the paper and machinery makers of the Hudson Valley were the hosts at a delightful banquet in the great dining hall of the Grand Union Hotel. The entertainment committee did such a thorough job of providing amusement that the speakers hardly had a chance at all. They didn't seem to mind, and so did the gathering. It was the largest affair the Association has held, 350 being present. Certainly there has never been more thorough enjoyment of such an occasion.

Thursday morning a cavalcade of autos started for Corinth, Glens Falls, Hudson Falls, etc., for visits to the pulp and paper mills and the machinery plants of that wonderful district. A complimentary luncheon was served at Glens Falls and the guests were taken for a delightful sail on Lake George in the evening. Somebody managed to slip the weather man a cigar or something, for he certainly smiled the while we had so much to do. On Friday the party went to Schenectady by auto, inspected the great plant of the General Electric Co., ate lunch in the company's restaurant, and some departed for home, while others visited the felt mills of F. C. Huyek & Sons at Albany.

There were some who thought the program too

crowded. Experience has been that the first morning is none-too long for business, if such a session is held and reports of committees brought up for discussion. In this case there was time for one paper before lunch. The afternoon certainly was crowded. Perhaps there would have been no discussion of papers if there had been more time. The delegates did not show much inclination to talk or argue, so the papers were rather in the nature of entertaining lectures. The subjects were well chosen, so that there was something of interest to everybody. Perhaps that is, after all, the best kind of a program for a meeting in a manufacturing centre where there is so much of interest to be seen.

The next event to prepare for is the meeting of the Technical Section and the Canadian Pulp & Paper Association in January.

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#### COBWEBS.

Canada shipped a greater value of newsprint to the United States in June than the total paper exports of that country for the same period.

Exports of paper from U.S.A. for June, 1920, were \$560,000 (10 per cent) less than for June, 1919. Imports increased 40 per cent.

It looks as if Mr. Backus, et al. are planning to have "a friend at court" by arranging an agreement with the town of Kenora. Other concerns are willing to play the game of competitive bidding for pulpwood limits.

The site of the power development for the Spruce Falls Pulp and Paper Co. is referred to as Sturgeon Falls. With already such a well-known spot as Sturgeon Falls, the location of a plant of the Spanish River Pulp and Paper Mills, the duplication of name should be stopped right off.

Canada is slowly but surely becoming self-contained with regard to papers and paper products required in the Dominion. An Ontario firm recently announced its intention of making blotting paper, and now we hear of a factory in Victoria, B. C. for the manufacture of abrasive papers. The organizers of this concern seem to have exaggerated somewhat the domestic market for abrasive papers. Instead of imports of over a million dollars as mentioned in the tale told in Vancouver, the Department of Trade and Commerce for the year ending March 1917 reports imports of abrasive paper valued at \$278,851, which is dutiable. Of this amount, \$272,616 worth came from the United States. The total imports of abrasives for that year was \$982,859. As that was a munition-making year it is not likely that these figures have altered very much.

The ex-Kaiser has given up sawing wood. Anybody want the job?

The Abitibi Company has again shown its leadership by offering to "stake" old and reliable employees to \$2,000 worth of material with which to build their own homes. This all makes for stability and content.

The United States imported 117,478,620 pounds of newsprint in June, 1920, at an average price of about 4.3 cents per pound. During the same period 10,407,116 pounds were exported at an average price of 6.3 cents. We should like to know how much of that was Canadian paper.

The Digester is now set up and printed at Grand Mere. The new Laurentide printing plant includes an Intertype typesetting machine. Congratulations are in order on the excellent appearance of this interesting paper. We are glad to hear it is to be issued weekly.

The manager of the Nashwaak Pulp & Paper Co. wants the city of St. Johns, N.B., to extend its water system so they can have a greater supply without depriving the people. It seems a bit short-sighted of one of the city fathers to say there was plenty of water for residents near-by, when the mill was not running. He seems to forget that if the mills were not running the residents would be running—somewhere else.

Nova Scotia has a wonderful record; in fact, it is unique in the world's history. The Liberal Party have been in power for 38 years without a break and have just been returned for another five years and with only a four year break they have held office since Confederation, 53 years, and the Prime Minister has held office for 24 years and has also just been returned for another five years.

In these times of world unrest this is something that cannot be emphasized too strongly.

Our congratulations to Nova Scotia and her leader.

When a wholesaler in Boston pays a Maine farmer a check for \$100 on a Boston bank for potatoes, and pays the same to a Quebec farmer for the same quantity he pays the same money to each for the goods. But, if a Boston newspaper publisher pays 100 United States dollars for a ton of newsprint to a Maine manufacturer and a Quebec paper-maker asks 100 United States dollars for the same goods, the publisher is overcharged by the Canadian mill to the extent of the rate of exchange. At least that is the sense of a statement credited to a newsprint man across the line. It looks like "cubist" economies to us.

# The Mucilage of Parchment Pulps

By Florence B. Seibert, A.B. and Jessie E. Minor, Ph.D.,  
Hammersley Mfg. Co., Garfield, N.J.

In an article in the Zeitschrift für Angewandte Chemie by C. G. Schwalbe and Ernst Becker, the importance of the presence of mucilage in pulps which are used for parchment paper and a method for its development is discussed at length. The conclusions reached in that article seemed to support some of our earlier work and, at the same time to suggest a further application. Therefore, we submit the following lengthy abstract of his work, a discussion of its relation to our work, and a few new experiments which grew out of his work.

According to Schwalbe and Becker, it is the presence of a hydrocellulose already existent in the Mitscherlich pulps, as indicated by their high copper numbers, which cause them to develop mucilage during beating much more quickly than a pure cellulose pulp and which is probably the reason why they are known as good parchment pulps. If the pulp originally contains very little of this hydrocellulose, the formation of considerable mucilage can be brought about by long beating, since the beating itself tends to produce more hydrocellulose and from this more mucilage is formed. But the rate of the production of mucilage is related to the initial amount of hydrocellulose present, which is shown by the fact that with pulps with a low copper number, the production of mucilage is much accelerated by a previous treatment with acid or with an acid producing substance like sodium chloride under pressure. If a good mucilage forming pulp is washed with hot water, the hydration is accelerated, but if the pulp is digested in hot water previous to beating, hydrolysis also is accelerated to such an extent that the copper number and the mucilage forming power of the pulp is decreased.

Schwalbe and Becker define the copper number, or the amount of copper in a Fehling solution which is reduced by hot pulp, as the measure of the amount of reducing substance present, and the cellulose number, or the copper adsorbed by cold pulp, as the measure of the adsorbing power of the cold cellulose and, therefore, the measure of the power to swell or hydrate. A pulp with a high copper number would contain a large percent of hydrocellulose and would, therefore, easily form mucilage, but a high cellulose number indicates a tendency to rapid hydration which might lead one to stop beating before developing hydrocellulose and mucilage.

The relation between high copper number and good parchmentizing qualities is illustrated by numbers 2, 3, 4, 5, and 6 of Table I, which is compiled from figures given by Schwalbe:

TABLE I.

	Cor- rected Cop- per No.	Time Cellu- lose to a standard required to beat slowness
1. Soda pulp . . . . .	1.89	0.39
1a. Soda pulp, acid softened	14.02	0.37 20 min.

2. Easily bleached sulphite pulp . . . . .	1.42	0.14	3-3.4 hrs.
2a. Same pulp, acid softened	7.74	0.41	20 min.
2b. Mucilage of same pulp, after reaching standard slowness . . . . .	2.23		
3. A Mitscherlich pulp . . . . .	1.81	0.36	2 1-3 hrs.
3a. Same pulp, in hot water 24 hours . . . . .	1.03	0.14	3-3.4 hrs.
3b. Mucilage of same pulp, after reaching standard slowness . . . . .	2.30		
4. Parchment pulp . . . . .	1.26	0.33	4 1-4 hrs.
5. Parchment pulp . . . . .	2.28	0.29	
6. Parchment pulp . . . . .	2.00	0.46	2 hrs.
7. Nitrating cotton . . . . .	0.28	0.30	12 hrs.

Number 2 was an easily bleached sulphite pulp not intended for parchment paper, number 4 was supposed to be a good parchment paper, but trial in a test beater proved that it developed mucilage much more slowly than numbers 3, 5, and 6, which had the high copper numbers.

The fact that with long beating mucilage will develop in a pulp with a low copper number to the same extent as in one with a high copper number is shown by comparison of numbers 2 and 3. Although No. 3 had a copper number nearly thirty percent higher than number 2, these same pulps, after beating to the same slowness, had approximately the same copper numbers, as shown by numbers 2b and 3b. This increase of copper number during beating was also illustrated by the experiments recorded in Table II which were carried out in our laboratory. In this work the amount of reduction was noted in a series of pulps taken during the process of beating at intervals of one hour.

TABLE II.

Pulp No. I		Pulp No. II.	
No. of Hours in Beater	Copper Number	No. of Hours in Beater	Copper Number
Original . . . . .		Original . . . . .	1.95
1. . . . .	2.890	1. . . . .	3.58
2. . . . .	3.110	(washing began)	
3. . . . .	3.148	2. . . . .	2.42
(color added)		3. . . . .	2.36
4. . . . .	2.060	3 <sup>3</sup> / <sub>4</sub> . . . . .	2.09
5. . . . .	2.790	4. . . . .	1.95
6. . . . .	3.280	(color, alum, size added)	
		4 <sup>1</sup> / <sub>2</sub> . . . . .	2.34

The regular increase in the copper number during beating, with the exception of when color was added, indicates clearly that beating produces a copper reducing substance. However, continued beating reduces the average length of the fibres and, consequently, tends to weaken the paper made from them. Therefore, Schwalbe and Becker attempted to increase the hydrocellulose by subjecting the pulp to an acid treatment previous to beating. Because of the presence of that additional hydrocellulose, less beating would be

required and less injury would be done to the fibres.

By reference to Table I it will be seen that the copper number, indicating the mucilage forming power, of the soda and easily bleached sulphite pulps were increased by treating them with hydrochloric acid previous to beating. The soda pulp is attacked more readily by the acid treatment than is the sulphite pulp, and this accords with practical experience that treatment with alkalis makes cellulose especially sensitive to acids and vice versa. Furthermore, soda pulp, in which the hydrocellulose has been partially destroyed by the alkali cook, is difficultly beaten to mucilage, whereas, after a new formation of hydrocellulose through an acid treatment, the mucilage is formed with very little trouble.

Also, the time required to make mucilage from a sulphite pulp of low copper number after softening with acid, was reduced from three and three quarters hours to twenty minutes, as shown in numbers 2 and 2a. The time required to produce mucilage from a parchment pulp which gave a high original copper number was two hours and ten minutes, considerably less than the three and three quarters hours required by the former sulphite pulp of low copper number, numbers 2 and 3.

Numbers 3 and 3a show the effect of keeping the pulp in hot water for twenty four hours. In this case the copper number decreased from 1.84 to 1.03, or 44 per cent, of the original number, and the time of beating to mucilage was increased from 2 1/6 hours to 3 3/4 hours. The authors consider this as merely a case of dissolving out a large percent of the hydrocellulose already existent in the pulps because in the water extract from the pulp, they find nearly five percent of reducible sugars. The formation of these soluble products was also illustrated in our work. In Table II we show a regular decrease of copper number during the washing of the pulp with cold water. In the work of Schwalbe and Becker and in our work, the actual loss of weight of the pulp by water treatment was determined. Apparently, in either hot or cold water, the making of the soluble products from the insoluble ones occurs much more rapidly than the initial formation of the insoluble reducible products, giving the decrease in the copper number during washing.

That these degradation products are sugars and not acids, was very nicely shown by an experiment in our laboratory. A part of a sample of good parchment pulp, which had been merely disintegrated in a beater, was triturated in a mortar for one and one half hours, then the triturated and the non-triturated portions were placed in filter papers which had been washed neutral to methyl red and washed with neutral water. The triturated pulp was decidedly more alkaline to methyl red than the original sample and, when washed with hot, neutral water, it increased in alkalinity. On washing later with cold, neutral water, both of the pulps became acid to the indicator, but on again washing with hot water, more alkalinity was developed. This alternating of acidity and alkalinity with cold and hot water could be continued for some time. Apparently, hot water developed hydration enough more rapidly than it could be washed out through a filter paper to have its alkalinity apparent to this sensitive indicator, whereas the more slowly formed hydrate of the cold water is washed out as quickly as formed.

Also, since, after triturating for one and one half hours, the pulp tested more alkaline than before, and this in the presence of an indicator which can easily detect the excess alkalinity of hydration in hot water, it would seem that acids are not developed by beating, except in the presence of an oxidizing agent like bleach.

Schwalbe and Becker seem to put much emphasis upon the necessity of having, for a good parchment pulp, besides a high copper number, a low cellulose number, since it seems to indicate a small degree of swelling. While in the small test beater the rapid hydration made their stock so slow that the beater would stop before sufficient mucilage had been formed, in a large beater there would probably be power sufficient to drive the pulp as long as desired, though slowly.

Schwalbe and Becker state that the copper number may be due to the cellulose itself, or to the incrustation, but that the cellulose number indicates the swelling power of the incrustation only. Our work would seem to confirm this theory. Of two Mitscherlich pulps which we tested, one pulp contained 5.36 percent of lignone, as determined by the malachite green and Congo red measurement method, while the other was shown by the same method of testing to contain only 2.10 percent of lignone. The cellulose numbers of these same pulps were 0.812 and 0.512 respectively. The copper numbers of these pulps, Table III, numbers 1 and 2, do not vary to any appreciable extent, and this parallels experience with the two pulps that they are about equally good parchment pulps, so far as mucilage formation is concerned.

The suggestion as to the value of the acid treatment before beating led us to try out some experiments on pulps made from old papers which had been subjected to a mechanical process for the removal of the wax coating which had been put on them, and our results, recorded in Table III, seem to confirm Schwalbe's theory.

TABLE III.

	Copper Cellulose		
	No.	No.	Ash
1. Mitscherlich sulphite pulp....	4.26	0.812	0.40
2. Mitscherlich sulphite pulp....	4.40	0.526	0.52
3. Paper from sulphite pulp . . . .	2.96	0.606	0.30
4. Unbleached parchment paper...	3.02	0.468	0.52
5. Pulp recovered from old paper	2.52	0.398	1.20
6. Paper from recovered pulp . . . .	2.54	0.000	1.04
7. Parchment from recovered pulp	2.18	0.000	1.34
8. Recovered pulp, treated with 1% HCl for 5 minutes, washed . . . .	2.54	1.292	0.48
9. Same as No. 8 but triturated in a mortar for twenty minutes . . .	2.96	0.975	0.34
10. Same as No. 8, treated with 2% HCl for twenty minutes, washed	2.58	1.262	1.38
11. Same as No. 10 but triturated in a mortar twenty minutes . . . .	0.973	2.952	1.22

It will be noted that the copper numbers which we give are slightly higher than those of Schwalbe and Becker. Our method of manipulation was slightly different, but our numbers were all carefully checked, and we believe that they are in the proper ratio to each other, even if they are slightly higher than those of Schwalbe.

The fact that the cellulose numbers of the paper and parchment made from this recovered pulp were zero

indicates that the pulp was "dead" and that, by merely beating, it would be as difficult to produce mucilage from it as from cotton. Its relatively low copper number, and the inferior qualities of the paper and parchment made from it seem to confirm this view. It was possible, however, to introduce some hydrocellulose by treating with one percent hydrochloric acid, followed by triturating the pulp in a mortar to simulate beating in a koller gang, and this increased the copper number, (number 8) as predicted. A two percent acid treatment caused such a rapid hydrolysis that on beating, a considerable amount of soluble dextrine was formed and washed out, and the copper number shows a large decrease, from 2.58 to 0.97. These dextrines were also detected qualitatively in the acid liquor drained from the pulp when it was tested with Fehling solution.

The large increase in the cellulose numbers of the pulps treated with acids, numbers 8, 9, 10, and 11, was somewhat parallel with the increased slowness of the stock due to hydration. This same increased reactivity was shown by the fact that with each of these four samples, the ash consisted largely of copper adsorbed from the screen on which the pulps were washed. This adsorption, however, was offset by the dissolving action of the acids on the adsorbed salts already in the pulp, hence the low ash of numbers 8 and 9. Further adsorption of the copper by the pulp treated with the stronger acid in numbers 10 and 11 again brought up the amount of ash.

In order to determine the effect of the acid treatment of this "dead" pulp upon the strength of the papers made from it, pulp samples were tested in pairs and each pair was treated under parallel conditions, except that one was digested with distilled water, the other with hydrochloric acid. At intervals, samples were taken out and made into hand sheets and the strengths were determined by averaging the Mullen pop tests taken all over the sheet. This was repeated on different lots of pulp, some being treated with cold water and acid, and some with hot water and hot acid and the hand sheets were compared for strength on the basis of the average strength per gram of air dry pulp.

Unfortunately, the tests made on the samples of the different pulps did not always bring out the same point to the same degree, but in general, we found that the acid treatment decidedly increased the strength of the paper, but that there are a number of conditions which, if not controlled, will cause, instead of an increase, a decrease in strength. If the pulps were digested in cold acid, the tendency was for the pulp to increase in strength with the acid treatment more rapidly than with the water treatment, but when digested hot, the tendency was for the acid treated pulp to reach its maximum more quickly and to degenerate more quickly than the water treated one. The pulps treated with hot water degenerated more rapidly than those with cold water, which is in keeping with the practical fact which we demonstrated with methyl red indicator, that hot water hastens hydration and, therefore, hydrolysis, thus weakening the sheet.

The point raised by Schwalbe was not that the acid was a factor in the direct making of mucilage, but

that acid treatment created a condition of pulp by which mucilage would be easily made in a beater. In the hand sheet experiments mentioned above, we found that pulps which had not reached their maximum strength were benefitted by triturating, but that pulps which had passed their maximum and were decomposing, went to pieces very rapidly when triturated. This decomposition has already been mentioned in connection with the copper numbers of numbers 8, 9, 10 and 11 of Table III.

A part of the irregularities experienced with these tests can be explained by the fact that the pulps used were from laps made from old papers in very different state of preservation and that during the process of disintegration they were subjected to a very drastic caustic treatment under conditions which were not very uniform. Also, the fibres of this pulp were very short and the amount of hydrolysis which they could endure without complete disintegration was very limited. Schwalbe also makes note of his difficulty in getting concordant results with different pulps and he attributes it to his inability to determine variations in the pulps as to their original content of hydrocellulose, oxycellulose and mucilage.

Schwalbe's theory of the reactions of cellulose decomposition is slightly different from that which we have suggested previously, but it is in no way contradictory. On the basis of some work of Hanser and Herzfeld, who were able by long washing in a Soxhlet to separate hydrocellulose into soluble dextrines and pure cellulose, Schwalbe concludes that in the formation of hydrocellulose, there is first formed a small amount of soluble dextrine, but this is immediately adsorbed by the insoluble cellulose, making it seem like an insoluble, reducible substance. This is the substance which he calls hydrocellulose and which he considers essential to the formation of mucilage in a pulp from which the reactive lignone material has been removed. This is supported by some work which has been more recently reported, in which he was able, by boiling some hydrocellulose with lime, to obtain a residue of pure cellulose, while the filtrate contained isosaccharic acid.

If, as we have proposed, beating causes an increased hydration or adsorption of hydroxyl ions by the surface of the cellulose molecule, and the close proximity of these ions is able gradually to bring about a hydrolysis in such a way as to open up the oxidizable CO group and allow a reduction of a Fehling solution, then it is quite conceivable that this altered group, when adsorbed by an unaltered molecule, will, by its mere proximity, easily catalyze a further hydrolysis. This would explain why the latter steps of the reaction occur more rapidly than the former ones.

The fact that the same mucilage which is formed by long beating can be made more rapidly after an acid treatment would confirm the hydrolysis theory of the making of mucilage. But this making of mucilage is but an intermediate step in the hydrolytic decomposition of cellulose. Therefore, as hydrolysis proceeds, we get a steady increase in the mucilage production until the ratio of the amount of cellulose to that of mucilage is such that the decomposition of the mucilage occurs more rapidly than its formation, and then we get the loss of mucilage and the decrease in paper strength.

Since the first reactions of hydrolysis are more difficultly accomplished than the latter ones, in cotton or in old pulp like that with which we experimented, mere beating, no matter how long continued, is not likely to be able to make mucilage enough more rapidly than it is destroyed to ever obtain an accumulation sufficient to give a parchment effect. Such pulp is commonly referred to as "dead" pulp. The acid softening seems so to readjust the molecular affinities as to accelerate greatly the initial hydrolysis and, therefore, make possible a greater accumulation of mucilage at one time. If acid treatment, or subsequent beating is continued past this time of maximum accumulation, we get a decrease in the copper number and a decrease in paper strength. Schwabe's point, that some hydrocellulose is always essential to the making of mucilage, merely means that in some way, either by the unstable lignine residue or by some reducible hydrocellulose made by acid treatment, the initial reaction of mucilage making must be accelerated sufficiently to offset the mucilage decomposition and allow an accumulation of mucilage which will give the parchment effect.

#### SUMMARY.

In the foregoing we have attempted to develop the following propositions:

A good parchment pulp must have a high copper number.

The mucilage formed from long beating has a higher copper number than the original pulp.

The hydrocellulose present in the parchment pulps causes such pulps to develop mucilage much more quickly than does a pure cellulose pulp.

The amount of mucilage developed by beating depends upon the hydrocellulose present in the pulp and the time of beating.

The amount of hydrocellulose present in a pulp can be increased by treatment with acid or an acid producing substance previous to beating.

The cold acid treatment previous to beating, if not excessive, increases the strength of the paper made from it, but hot or excessive acid treatment destroys mucilage and decreases paper strength.

To obtain a paper rich in mucilage, it is necessary that the velocity of the earlier decomposition reactions in which mucilage is formed be so accelerated that mucilage will be formed enough more rapidly than it is decomposed to permit of a mucilage accumulation in the pulp.

### THE U. S. A. FOREST POLICY.

#### A Book

Be not avert the question upon which the press of the world is nearly if not quite unanimous, is the production of print paper. With publishers in this country it is paramount to presidential politics.

The public is just beginning to realize the importance of this question. The average citizen who thinks as he feels knows that the salvation of the paper industry is in timber. This has been known to newspaper publishers ever since newspaper began. The indiscriminate destruction of timber has had much to do with the shortage of news print.

The charter granted to the province of Massachusetts in 1691 reserved to the crown all trees two feet in diameter, and forbade anyone to cut such trees without royal license. It was not known then that the

destruction of timber would mean inroads upon the paper industry. If this had been foreseen by the colonists they would not have been so hostile to the royal decree.

The resultant of the denuding of the forests of this country is clearly and definitely set forth in a volume on the subject, "The United States Forest Policy", by John Ise, associate professor of economics in the University of Kansas. It takes up and discusses all the legislation that has been enacted by Congress.

While it is not expected that the volume will appeal to the general readers, it should be examined and studied by every newspaper publisher. Should the layman read it he would be surprised to learn how much time and attention have been devoted to the subject by statesmen and by several administrations. Investigations have been made by special commissions and committees, and Presidents Hayes, McKinley, Cleveland and Roosevelt gave the subject special consideration.

Agitation began with the states that were most interested. Strange to say, this agitation did not begin so very long ago. However, before the question was taken up by the states several Government officials saw the need of forest protection as early as 1849. The first reserve bill was not introduced until 1876. And then "by request". President Cleveland was the first President to take an active interest in the public lands—The Fourth Estate.

### NOVA SCOTIA HAD FIRST NEWSPAPER IN CANADA.

The first Canadian newspaper was published in the City of Halifax; the second in the city of Quebec. On the 4th of June, 1764 the Quebec Gazette made its initial appearance, the probability being that the British commander, General Murray, was the main support of the endeavor. But two Philadelphia printers were the first proprietors having bought their presses, types and inks and paper in England. Half of the paper was in French and the rest in English, the two languages being in parallel columns. To start the venture 300 subscribers at \$3 each per year were essential and so the first edition did not make its appearance until this was assured.

Montreal was the next city to have a paper. This grew out of the American occupation in 1776 when the three commissioners of Congress came to the city, to influence, if possible, Canadians to be neutral or anti-British in the war for independence. Benjamin Franklin brought type and materials for a paper from the States by a dangerous journey through Lake George, up the Richelieu river and landed at Chambly. The press was set up and the paper issued from the Chateau de Ramezay where the officers were living that winter. The American Congress had voted \$100,000 to win over the Canadians and the paper was a part of the plan. Joseph Fleury de Mesples was engaged to edit the paper the leading articles of which were from the pen of Franklin. But the campaign was a failure and when the Americans were forced to quit the place they left the printing plant behind with Mesples. He revived the interrupted journal in June printing a four page paper with eight columns all in French. He clashed with various civil and church authorities frequently so that his career in the city was a very exciting one and at one time he was ordered to quit the province—an order which was revoked later. Exchange.

# A New Felt-Cleaning Device

By C. A. WOODCOCK.

"A new felt cleaning device as a means of increasing production" appears to be the text assigned to me. I shall have to ask for the same privilege that was granted to one of the gentlemen who is to speak at the banquet this evening. The Committee on Arrangements, in extending the invitation to him, suggested he take a certain subject as the theme for his remarks, but, owing to the shortness of time that he would have to prepare his remarks, concluded the invitation by telling him that he could talk on, or about, or around, any subject which appealed to him. So, instead of talking only about a new felt cleaning device as a means of increasing paper production, my remarks will be around the subject.

The efficiency of a paper machine as a whole depends upon the power functioning of its various parts. For those mills that have arrived at a point in paper machine maintenance where it is possible to run, favorably, the various parts of the machine for several consecutive days or a week without the necessity of stopping for repairs, it is obviously essential that, if they are to reach the highest efficiency, they abandon the old methods of operation, which call for frequent stopping of the machines to wash the press felts and screens.

There are screens that have been installed in the last few years, in large numbers, in various mills, of a type that is more or less self-cleaning—that will run the full week through, or longer, without its being necessary to clean them. The Bird screen is well known to be such a type. The other chief cause of lost time on a paper machine is the necessity of stopping production to wash press felts. There has been a great deal of effort expended to avoid this. But a felt cleaning device of a type that will actually cleanse the felts of paper machines of all types, and without interfering with the continuous production of the regular quality of paper, is no longer a dream but a reality. Thus the felts may be cleaned as frequently as desired, without interfering with the continuity of the paper manufacturing operation. By keeping the felts in prime condition, water may run through them more freely, permitting the paper to reach the dryers in a more uniformly dried condition, which will allow the regular drying operation to be done with some considerable reduction in the amount of steam necessary to dry.

When the newly formed web of paper approaches the couch rolls from the Fourdrinier part of the machine, its water content is about 87 to 90 per cent. The chief function of the machine from this point on is, therefore, to remove this water, and this, as we all know, is done first by subjecting the web to pressure in the presses and then to heat in the dryers. In removing the water by pressure, the web is supported upon successive woolen felts of different degrees of porosity, depending upon the speed of the machine and the quality of paper to be made. These felts pass over suction boxes and between press rolls and all of the water sucked and

squeezed from the web during this treatment must pass through them. For this reason it is of vital importance that the felts be kept comparatively dry and porous, and continually or frequently freed from small particles of filler and fibre which are held within them as the water filters through. The general practice, as we know, for cleaning the felts of Fourdrinier paper machines is to stop the press part of the machine, slacken the woolen press felts, release the pressure between the press rolls, and apply water to the felts to wash off the accumulations of dirt thereon. This method requires that the machine be put out of the regular manufacturing operation each time the felts are to be cleaned. In the case of most kinds of paper it is necessary to clean the felts from one to several times a day, involving a drenching of the operatives, damage to the felts, a considerable loss of production during the actual period of washing, and about an equal amount for time lost in straightening out the felts and getting them back to proper tension and alignment, with weights and levers of the presses again in adjustment. Our observation has been that in well regulated mills the time lost each twenty-four hour day, incidental to cleansing felts in the old way, is about two hours. That includes the time consumed in disengaging the levers and weights, roping up and turning the felts, washing, getting the felts straightened out again, the weights and levers in proper adjustment, and the felts in proper alignment, the paper back on the reel, and everything so adjusted that saleable paper is being made. There is also time lost from breaks due to the felts being run more or less dirty before the usual washing-up time comes around.

In applying our felt-cleaning device, clear water or a solution of a suitable cleansing substance is supplied on either side of the felt, preferably— for the average mill—the dirty side or that side which comes in contact with the web, to loosen the foreign material deposited thereon. Thereafter a suction effect is applied to the dirty side of the felt to open the meshes and remove the water and material which have been freed thereby. Water is supplied either directly to the felt by suitable jets, or a better distribution of water may be obtained by applying it to one of the rolls over which the felt passes as it travels through the machine. In any case the water or cleansing fluid should be applied to the felt a sufficient distance in advance of the point at which the suction is applied to loosen gradually the foreign material so that it may be removed by the suction effect; but this should not be applied so far in advance that it may drain from the felt before the latter is exposed to the suction effect.

The suction is applied by means of a suitable suction box movably mounted so that it may be thrown into engagement with the felts during the cleansing period or taken out of operative relation to the felt during the normal operation of the machine, to reduce unnecessary wear on the felt and to prevent the collection of dirt in the vacuum box. The suction box we use has several novel features. It is so constructed that, over the ordinary types, it greatly facilitates the removal of material caught within the meshes of the

\*Read before the Technical Association of the Pulp and Paper Industry at the Fall Meeting in Saratoga Springs, N.Y., Sept. 1, 1920.

felt. Also any material scraped off the surface of the felt by the edges of the slots of the box will be drawn through the slots and not accumulate and ultimately obstruct them.

The pipe is supplied with warm water, or other cleansing fluids (which may contain a solution of suitable chemicals for aiding the washing operation). However, on regular news and some hardsized papers, we find it unnecessary to use any other cleansing fluid than warm water. The point at which the water should be supplied depends upon several factors, such as the speed of the machine and the amount of residue deposited upon the felts as determined by the character of paper being produced on the machine.

As to the results we have obtained from this felt-cleansing device that we developed in our mill about two years ago, and which was successfully installed about one year ago on our three Fourdrinier paper machines, which at present are running on newsprint, at speeds from about 650 to 675, permit me to quote from our monthly reports:

Our last monthly report compiled was for July, 1920, showing our machine production and efficiency, shows that we have increased our production over one year ago 12½ per cent., and increased our speed 7.1-2, and efficiency 5.1-3 per cent. over the same period. The average speed for our mill in July, 1919, was 600 feet; efficiency, 86.9 per cent.; pounds produced per inch trim, 696.2. In July this year the speed was 646; efficiency, 91½; production per inch trim, 771 pounds. This report is made up on the basis of wrappers being excluded from production.

Our increase in production for July, 1920, over July, 1919, amounted to 75 pounds per inch trim on a 24-hr. basis. This resulted in an increase in production of paper for the year, of 3,708 tons, on an average total trim of 319 inches. The saving from increase in efficiency, which amounted to 5.1-3 per cent., meant an increase in production of 36 pounds per inch trim on a 24-hr. basis. This for the year, based on 319 inches average trim, accounted for 1,625 tons of the increase. To commercialize this increase in production, due to the increase in efficiency, of 1,625 tons, say at a profit of \$19 per ton (which is the approximate figure that the Federal judges in the newsprint case stated was a fair profit for the mills to make) meant an increased gain for the year on that basis of over \$30,000. Then add to that an item for coal saving for 5.1-1 of the production which went into saleable paper instead of being waste. It would require steam or extra coal to dissolve the broken paper, which would mean an additional saving of \$8,000 on the basis of coal costing \$7 per ton, and taking about 1,200 lbs. of coal to dissolve a ton of broken paper.

It is quite possible that some of your mills may have taken a little larger profit than the \$19 per ton. I thought it safer for illustration for me to use that figure, in these days when the question is such a live one, of what is a fair profit, as \$19 per ton had been fixed on by the Federal judges as being a fair one per ton as a margin of profit. Apply this same basis of calculation for a machine having an average trim of 100 inches, which we might assume is the average size, this increase in efficiency and saving of coal would amount to about \$12,000 per annum.

I have taken the liberty of treating this matter from a commercial point of view, for, as I see it, irrespective of our pet theories, it will surely sooner or later have to be subjected to the commercial test, or the question

asked what it will save or permit of gain in the terms of dollars and cents.

Note: Mr. C. A. Woodcock is one of the inventors of and Woodcock and Walker Felt Cleaning Process.

#### LOCATION OF NEW MANOUAN MILL.

Further information is available regarding the announcement made last week of the organization of the Manouan Pulp and Paper, Limited. The new company will operate the power known as Allard Falls, on the St. Maurice River, above La Tuque, and will control two tracts of timber on the Manouan River, containing approximately 100,000 acres.

The properties secured are fortunately located in a district which has already provided some of the most successful pulp and paper undertakings in the country. Surveys that have been made of the limits secured by the company, indicate that the supply should endure for a period of over 60 years for the proposed 100-ton mill. They adjoin the properties owned by the Laurentide Company, the Belgo-Canadian Company, and the Brown Corporation. The limits acquired have not been entered.

Charles E. Eaton, of Watertown, N.Y., a pulp and paper engineer of over 30 years experience, who has constructed some of the largest mills on the continent, has completed an exhaustive survey of the conditions and costs in connection with the proposed mill and operations of Manouan Pulp & Paper, Limited. In his report, Mr. Eaton states that the wood can be delivered in the mill at \$1.50 per cord less than at any of the competing mills on the St. Maurice River. This is due to the unusually short drive required, it being estimated that it will take less than two months.

#### NO MIRACLES IN INVESTING

Money honestly employed earns a fair return. This is a sound and unchangeable principle of finance and business. The investor who expects more is not investing, he is speculating—and many are asking for miracles.

There are hundreds of propositions in which the investor can make six to eight per cent. with a minimum risk. But with a great many there is no attraction in this. Instead of putting their money where it will bring a fair return they seek to make a fortune over night—gold mines, oil wells, impracticable inventions, magic fuels, etc., etc., attract the small savings of the wage-earner when the man of means is buying bonds.

The man who can afford to "take a flier" in the speculative market is usually the last one to do so. The person who cannot afford to take chances is always willing to take a jump in the dark, taking the advice of the Ponzis and the Sheldons and ignoring the counsel of experienced bankers and brokers.

Despite the alluring talk of the socialists we believe that the poor—that is those who are comparatively so—will always be with us and that those who are provided with more of the world's goods will always be envied. But if people would save and invest their money properly it would go a long way towards bringing about a practical Utopia.—Financial Post

Mr. Hickman, an organizer of the International Brotherhood of Paper Makers has been in St. Catharines recently, gathering the workers at the Kinleith Paper Mills into the fold. His efforts appear to have been quite satisfactory.



## Wrapping Philadelphia

(From Paper Trade Journal)

Philadelphia daily consumes almost 90 tons of wrapping paper each of the 300 working days of the year. The annual consumption totals 26,851 tons, and the wrapping paper bill for a year aggregates over \$8,378,000.

These are the high lights of a report just prepared by the D. L. Ward Company, which at its own expense and animated by the purpose of showing to the mills that Philadelphia was not securing a fair proportion of the country's production of wrapping, conducted the most exhaustive survey ever made of Philadelphia paper consuming conditions.

This survey, conducted over many months and at a large expenditure of money, was made from the ground up. Only actual and absolute figures were taken. There was no guess work at all. To make it the Ward Company engaged the services of a dozen men who knew nothing of paper conditions that they might not be influenced by prejudice. These men went in person to over 17,000 actual and legitimate consumers of wrapping papers, and secured from their books definite and exact figures. It is probably the first time in the city's industrial history that an investigation of like thoroughness and comprehensiveness was made.

### Survey Report of Wrapping Paper

The conditions surrounding the distribution of wrapping paper in Philadelphia and vicinity have been appalling. Never before as a similar shortage of paper existed.

Certain mills heretofore devoting their entire production to wrappings have been tempted by unprecedented prices to put a considerable portion of their output into news print. This further cramped an already distressed market, and the resultant condition forced consumers to go outside of the city, and bid for requirements which should certainly have been provided for in the local market. An inflated demand was created, which tended only to increase the consumer's difficulties, and advance the prices of the commodities he was seeking.

Then again, the allotment, of the tonnage on the past performance—a system instituted by a number of mills at the eleventh hour—operated unjustly, giving as it did, the paper speculator, at all times an evil business influence, much greater tonnage than was deserved. This naturally caused a shortage among the paper distributors who were buying for their legitimate requirements.

It has been our feeling that a great deal of the difficulty could be more or less directly traceable to a lack of familiarity on the part of the paper manufacturers, as to the extent of absorbing power of the Philadelphia market. In an endeavor to correct this, we gave careful consideration to a means for determining the paper consumption in this territory. Even to approximate the local demands was impossible. We decided that a satisfactory results could only be obtained by an actual survey made in the field, and realizing fully the expense and labor involved, the plans were carefully prepared and put into operation the early part of the year.

We selected for the work, twelve men who knew nothing of paper or paper conditions. Consequently they were unable to report anything other than the facts given by the consumer upon whom they called,

and in this way we eliminated the surveyor's personal opinion from the reports and confined said reports to the actual conditions existing with the consumer.

20,632 consumers, large and small, were listed and routed on cards designed to take care of the desired information, and so arranged that the investigator could readily note the facts as given. As an indication of the consumers' interest in the survey, it is worth mention that, in almost every case, the desired information was gladly supplied and purchase records and back invoices were referred to in practically all offices of large buyers, who were much more inclined to seek the actual facts in their files than give approximate figures, offhand.

We consider ourselves amply justified by the results obtained. The market for wrapping paper is even larger than we had anticipated, in spite of the fact that we are working at it daily. This report is submitted to you with the hope that we may convey, to some extent at least, an idea of the size and importance of this territory.

In speaking of the Philadelphia market, it is usual to include all of that territory shown on the map accompanying this report, as this section is served almost entirely by Philadelphia houses. The figures shown herewith, however, cover only the City itself. The field work outside of Philadelphia is progressing rapidly, but has not been completed, and the finding have consequently been omitted. Furthermore, reports from "converters" totaling thousands of tons have been withheld, and the figures given in this report represent only the legitimate consumption of wrapping paper for wrapping purpose.

The following summary sets forth the quantities of the principals wrappings consumed in the city. All figures have been reduced to tons with the exception of tissues, which is shown in reams. Reducing this latter item to tons (figuring 9 pounds to the ream), the report shows a total tonnage consumption of 2,686 tons. News, 1,463; Manila, 4,213; Fibre, 4,685; Kraft, 10,914; Screenings, 2,890; Tissues, 2,686; (estimated at 9 lbs. per ream for 596,940 reams.)

Blessed is the man who, having nothing to say, abstains from giving us wordy evidence of the fact. —George Eliot.

It takes a good many shovelfuls of earth to bury the truth.—Swiss Proverb.

A controlling interest in the American Straw Board Company has been acquired by the Mid-West Box Company. The latter concern, which has mills at Anderson and Kokomo, Ind.; Cleveland, Ohio; Fairmont, W. Va., and Chicago, obtained control of the board company through its purchase of the holders of the estate of Ohio G. Barber, Akron, O. Conservative estimates of interested parties place the value of the various properties of the American Straw Board Company at \$5,000,000. It has ranked as one of the largest manufacturers of straw board for corrugating purposes in the United States. The move of the Mid-West Box Company management in gaining control is said to have been prompted by the need of protecting their raw material supply, to insure expansion and to effect an equitable distribution of the country's supply of straw-board for corrugating purposes.

## JOHN MacFARLANE WAS 79 YEARS OLD.

The death occurred early Monday morning at the residence of his son, Mr. D. H. MacFarlane, 6111 Sydenham Avenue, Westmount, of Mr. J. Im MacFarlane, for many years identified with the paper manufacturing industry in Canada, and who was at the time of his retirement from active business, in 1912, president of the Canada Paper Company, Limited.

Mr. MacFarlane was born 79 years ago at Fort Erie, Ont., and came to Montreal when young. After his education at the Montreal High School he worked as a clerk in two or three paper firms, and finally joined the paper manufacturing firm of Angus and Logan, of which the Canada Paper Company, Limited, is a development. In 1880, Mr. MacFarlane opened a branch for the Canada Paper Company in Toronto, remaining in that city as manager for eighteen months. He became a partner in the firm and was finally president.

Mr. MacFarlane, who settled in Westmount when that suburban city was considered in the country, was a mayor of that municipality, a school commissioner of Westmount, was a member of the board of the Mount Royal Cemetery, a director of the Montreal Water and Power Co., and a member of the Montreal Board of Trade.

He is survived by three sons, Dr. Douglas MacFarlane, at present at Macdonald College; Mr. Arthur MacFarlane, of New York; and Mr. David H. MacFarlane, architect of Montreal. Another son, Capt. J. R. N. MacFarlane, of the Canadian Forestry Battalion, died in London from influenza, after three years' active service. Two sisters also survive—Mrs. C. G. Godwin, of Ste. Anne de Bellevue, and Mrs. F. B. Francis, of New York. Mrs. John MacFarlane died in 1914.

## CHARACTERISTIC OF THE COLONEL.

When Corp. Dan O'Connell, the veteran of many wars, who, after being rejected three times from the C.E.F., on account of over-age, enlisted with the Merchant Marine and was blown up three times in transport and mine sweeper service, said that everywhere he applied for work, they told him he was too old to work, though he hadn't considered himself too old to fight. He reckoned without his hosts of the Sault. He found that, at least one Sault employer wasn't blighted with a short memory as regards services rendered the country, when the Atilic hordes were battering down the ramparts of civilization.

Corp. O'Connell, in the course of his search for the here-withal to live, by the sweat of his brow, called upon Col. C. L. H. Jones, the Manager of Operations of the Spanish River Pulp and Paper Company, himself a returned man. Col. Jones received the hattered and wounded visitor as a former brother in arms, and it was but a matter of a few minutes before O'Connell was placed in a good safe berth, where he will be able to perform the duties, despite the infirmity resulting from the loss of an eye, the partial loss of the use of an arm, the fracture of a shoulder and leg—three monuments of German mines and to pedoes. Corp. O'Connell hereafter will look after the storing of the supplies of the Spanish River Pulp and Paper Co., in the latter's vaults, at headquarters. Sault Ste. Marie Star.

## NEWS FROM NORWAY.

A recent report of the Trade Commissioner to Norway says:

The wood exported totalled in the month of April 120,000 m<sup>3</sup> as compared with 78,000 m<sup>3</sup> (cubic meter = 420 feet board measure) in 1919, 46,000 in 1918, and 120,000 m<sup>3</sup> in 1913. The increase since the two previous years is very important and is due to the increase in the export of sawn and planed wood. During the four months January to April there has been exported 318,000 m<sup>3</sup> as compared with 232,000 and 203,000 during the same period in 1919 and 1918 respectively.

	1920	1919	1918
		1,000 m. <sup>3</sup>	
Raw wood . . . . .	24	29	31
Planed or sawn wood . . . . .	96	49	88

Wood pulp has also been exported in greater quantities than in April last year, but less than in 1913. Chemical wood pulp, however, has been shipped in larger quantities than was the case in the years mentioned above. The paper export shows an excessive increase. The quantities are more than thrice those from last year and are fully as high as the normal figures. Wood Cardboard shows a remarkably strong increase:—

	1920	1919	1913
		Metric tons	
Printing paper . . . . .	9,580	3,381	9,061
Packing paper . . . . .	7,241	2,275	6,857
Wooden cardboard . . . . .	1,439	448	401
Wood pulp, dry . . . . .	521	1,058	1,643
Wood pulp, wet . . . . .	32,495	29,643	48,091
Chemical pulp, dry . . . . .	18,612	4,937	17,460
Chemical pulp, wet . . . . .	.....	.....	50

## Wood Trade.

The market is quiet under the influence of a very limited demand on the part of England. Prices, however, remain on the former level.

## Forest Fires in Norway.

On June 19 one of the heaviest forest fires on record in Norway broke out in the forests of Rendalen, some 180 miles north-east of Christiania. The origin of the fire was due to some careless fellows who were preparing their coffee. It spread rapidly, swept by a heavy southern storm and very soon an extensive area was ablaze.

From all parts people rushed to assistance, civilians and military, until between 1,500 and 2,000 men were engaged in resisting the terrible enemy. For more than fifteen hours all efforts seemed in vain, but at last the practical skill and tireless energy of the men prevailed and the fire was at last overpowered. Happily very heavy rains set in, which completely extinguished the smouldering embers.

The devastated area is estimated at upwards of 6,000 acres, and the damage although not yet officially stated, is hardly below £60,000.

Some other forest districts have also been visited by fires lately, but fortunately on a much more limited scale. But on the whole these fires naturally mean a great drawback to the wood trade and the allied industries.

## Pulp and Paper.

The markets for pulp and paper remain practically unaltered since our last report, owing to general slackness prevailing at this time of the year.

# A New Test for Lime and Cement Bag Paper

By PAUL HOUTSTON, Bureau of Standards,  
Washington, D.C.

In December 1915, the Lime Manufacturers Association, the Gypsum Manufacturers Association and the Cement Manufacturers Association requested the Paper Section of the Bureau of Standards to carry on an investigation of Lime and Cement Paper Bags for the purpose of developing specifications. Correspondence with the above associations showed that their organizations had no specifications for these paper sacks. The only information obtained was that the Lime Manufacturers Association desired a 50 lb. bag while the Cement Manufacturers Association desired a 94 lb. bag. The Paper Section also corresponded with a number of the cement and lime bag manufacturers and discovered that for a number of years they had been making bags out of paper as a substitute for burlap and cotton with varied success. Some of the consumers had given favorable reports on the use of their paper bags while others had claimed the sacks failed in service. As a result of all this correspondence, the Paper Section decided to comply with the request of the above organizations and carry on a thorough investigation of the subject.

Because of other work that was made necessary by the War, this investigation had to be discontinued until April 1919, when the work was taken up again. Through the courtesy of the bag manufacturers, new samples of bags were obtained and were first given the ordinary physical and chemical tests for preliminary work. Having completed all preliminary work, it was felt that a laboratory test should be developed that would give numerically the stress and strain that the paper of a bag underwent in service. Consequently a new test was developed. This test was called the Stress-Strain or Resiliency Test.

For this test, a large two hundred kilogram Schopper tensile strength machine was adapted with the following additional attachment. A brass cylinder was constructed and fastened to the upright standard of the Schopper in such a way that it would revolve. The revolution of this cylinder was so controlled by a small wire over a pulley from the weighted pendulum that as the pendulum moved from its vertical position due to the increasing loads, the cylinder revolved accordingly. This cylinder held a paper chart, and a glass recording pen was used to record both load and stretch. The pen was controlled by a small wire extending from the lower jawed arm over a pulley in such a way that as the lower jaw descended and the paper stretched under the load, the pen ascended and described a curve which registered stretch. It can thus be seen that the revolution of the cylinder caused the registering of load on the chart, while the ascension of the pen caused the registering of stretch. The result was a curve on the chart giving both the increasing load and increasing strength until the paper broke.

In order to read this curve it was necessary to draw up the chart so that load and stretch could be read

at a glance. The method used was as follows. An ordinary blank piece of writing paper was used for this purpose and placed in position on the cylinder. A point on the paper was chosen as the zero point for load and stretch. Then, the zero line for stretch was found by using a piece of steel between the jaws and by applying the various loads. Steel was used for this purpose because the chart was to be drawn up for a 70 kilogram load as a maximum and steel would not stretch at this load. By this method the zero line for stretch was drawn with the recording pen from the zero point and each kilogram load as indicated by the Schopper scale was pointed off as the load increased. At each kilogram point, a line was drawn parallel to the base or zero line for load. This base line was found by operating the machine with nothing between the jaws and was drawn with the recording pen from the zero point. Each centimeter that the lower jaw descended from its starting position or zero point represented the stretch and was pointed off accordingly. At the different centimeter points, lines were drawn parallel to the zero line for stretch. In this way, the chart was plotted to give accurately the stretch at different loads for any paper breaking under a 70 kilogram load.

The method used for obtaining the resiliency of paper on this Schopper machine with its recording device was the following. In order to obtain curves or loops (as they should be called in this case) to show this resiliency, or the endurance of paper under different stresses and strain a load was taken in each case 10 percent below the breaking point. This, of course, necessitated finding the tensile strength or breaking point for each grade of bag paper in both machine and cross direction. In order to do this, an average of ten tensile strength tests was obtained. After obtaining, in each case, the desired load of 10 percent below breaking point, each test sample was given this load and then the load was released and the operation repeated until the test sample broke. The result was a series of loops for each test sample, giving first the stretch at applied load, second the stretch when load was released, third the increase in stretch for every time load was applied over the previous time, and fourth the number of times the paper could stand the strain of this load before it broke. Three test samples from each grade of paper, cut in both machine and cross direction, were used, in order to obtain an average, and data was collected accordingly.

From this data it was not hard to choose the five bag papers which showed the best strength, tensile strength and endurance. In order to eliminate still further and pick the very best bag paper from these chosen five it was necessary to make other resiliency tests since two of these papers proved superior because their chosen loads of 10 percent below breaking point happened to be slightly lower than the chosen loads of the other bag papers. Consequently, a certain load was chosen that was just low enough under the breaking point to be used for all these five bag papers and the resiliency test was repeated. From the results

\*Paper read at the fall meeting of the Technical Association of the Pulp and Paper Industry, Saratoga Springs, N.Y., Sept. 1, 1920.

of these new tests, it was then easy to choose the very best bag paper of all.

The conclusion reached by the Paper Section from this investigation of cement and lime bag paper were that this resiliency test was the best known test for showing what the paper would do in actual service. To prove this point, the results of this resiliency test on a series of bag papers were compared with the results of a service or drop test on bags made up of the same paper. For a service test the bags were first filled with 94 pounds of sand and then dropped a dis-

tance of three feet through a trap door in a platform on to a solid wooden stand. Those bags whose paper proved the best according to the resiliency test could be dropped the greatest number of times before the paper broke. Although no great amount of work was accomplished on the drop test, the results were conclusive enough to show that the two tests checked and that the resiliency test actually gave numerically the stress and strain that a bag paper underwent in service. The Paper Section is convinced of the merits of this test and will be glad to demonstrate its operation to any who can visit the laboratory.

## Pulp and Paper Exports More than Doubled

The Pulp and Paper Magazine has made arrangements under which it will be able to present to its readers Canadian customs returns showing the exports of pulp and paper in more or less detail some two or three months earlier than has hitherto been the case. This will add very greatly to their interest and value, especially at the present time when pulp and paper exports are increasing so rapidly and are playing so important a part in our national economy.

In the following table are set forth the figures for the month of July, 1920, compared with those for July 1919, as well as the figures for the first four months of the current fiscal year, compared with those for the corresponding period in 1918 and 1919. The July exports reached a total value of \$16,014,747 in 1920 compared with \$7,730,162 in 1919, a gain of \$8,284,585, or of more than 100 per cent.

The total for the four months' period amounted to \$52,494,052, as compared with \$27,067,236 the previous year and \$26,707,802 in 1918. The gain over last year amounted to \$25,426,816. The figures are significant because they show that in the first four months of this year Canada exported pulp and paper of a greater value than in any full year prior to three years ago. In 1916-17 they fell short by \$5,972,160 to equalling the figures for the first four months of this year. Unbleached sulphite and newsprint paper lead in the extent of the increase. The enormously higher prices now being obtained, however, should be taken into consideration in estimating the growth of the industry, as of course the volume growth does not begin to show the same relative increase as the value. Following are the details:

### EXPORTS OF PAPER, WOOD PULP, and PULP WOOD.

Months of July, 1919 and 1920; and Four Months Ending July, 1918, 1919, and 1920.

Paper:		Months of July		Four Months ending July.		
		1919	1920	1918	1919	1920
<b>Printing Paper:</b>						
Book paper	Cwt.	9,462	9,798		15,930	24,751
	\$	99,842	110,596		169,987	259,886
Newsprint paper	Cwt.	1,146,462	1,219,439		4,269,216	4,906,188
	\$	4,064,303	5,727,193		15,035,927	21,916,549
Printing paper	Cwt.			4,375,373		
	\$			12,701,948		
Other paper	\$	475,080	1,039,225	1,785,162	2,326,495	4,247,019
<b>Total Paper</b>	\$	4,639,225	6,877,014	14,487,110	17,532,409	26,423,454
<b>Wood Pulp:</b>						
Sulphate Kraft	Cwt.	218,143	251,146		681,157	877,543
	\$	700,114	1,383,104		2,193,049	4,205,100
Sulphite, bleached	Cwt.	96,772	177,623		334,005	632,508
	\$	451,622	1,402,957		1,597,744	4,292,197
Sulphite, unbleached	Cwt.	390,258	626,574		1,056,182	2,185,494
	\$	1,502,597	3,822,679		4,112,833	11,621,457
Chemically prepared	Cwt.			3,131,394		
	\$			10,518,919		
Mechanically ground	Cwt.	316,174	838,118	1,300,065	1,346,396	2,208,530
	\$	436,604	2,528,993	1,701,773	1,631,201	5,951,839
<b>Total Wood Pulp</b>	Cwt.	1,051,347	1,893,161	4,131,459	3,417,740	5,904,075
	\$	3,090,937	9,137,733	12,220,692	9,534,827	26,070,593
<b>Pulp Wood</b>	Corol	122,069	141,741	615,723	328,386	368,851
	\$	1,231,527	1,515,906	6,232,251	3,260,241	4,061,376

Country of Destination.							
Paper and Manufacturers of:							
To United Kingdom	.. . . .	\$	195,449	425,949	364,878	988,550	1,548,102
United States	.. . . .	\$	3,849,826	5,535,386	12,323,501	14,053,282	20,998,774
Other Countries	.. . . .	\$	593,950	915,679	1,798,731	2,490,577	3,876,578
<b>Wood Pulp:</b>							
To United Kingdom	.. . . .	\$	327,706	1,426,291	7,089	992,486	3,436,193
United States	.. . . .	\$	2,491,282	7,101,893	11,145,654	7,136,018	20,839,881
Other Countries	.. . . .	\$	271,949	609,549	1,067,949	1,406,323	1,794,519
<b>Pulp Wood:</b>							
To United Kingdom	.. . . .	\$	.....	.....	.....	.....	.....
United States	.. . . .	\$	1,234,527	1,545,906	6,232,254	3,260,241	4,061,376
Other Countries	.. . . .	\$	.....	.....	.....	.....	.....
<b>Total Paper, Pulp Wood and Pulp:</b>							
To United Kingdom	.. . . .	\$	523,155	1,852,240	371,967	1,981,636	4,984,295
United States	.. . . .	\$	7,575,635	14,183,185	29,701,409	24,449,541	45,900,031
Other Countries	.. . . .	\$	865,899	1,525,228	2,866,680	3,896,900	5,671,097
Totals	.. . . .	\$	8,964,689	17,560,653	32,940,056	30,327,477	56,555,423

**PULP AND PAPER AT THE NATIONAL EXHIBITION.**

Although numerically the pulp and paper firms exhibiting at the National Exhibition, Toronto, were weak, those interested in the industry, and many others as well, learned something of the potentialities of the trade through the displays made by several firms. For instance the Interlake Tissue Mills, Limited, had an excellent display in the manufacturer's building with Mr. John T. Burholder of the head office, Toronto, and Mr. W. Limes of the mill at Thorold in charge. The booth was very artistically decorated, much of it bearing evidence of the decorative uses to which part of the firm's product can be put. The color scheme of Nile green and pink was carried out effectively by an artistic treatment of decorative crepe tissue with a lattice border and floral decorations hanging from the ceiling. In a nicely arranged alcove at the rear and in the showcase at the front of the booth were displayed the firm's products in the way of toilet papers, tissue towels, drug wrap, napkins, decorative crepe tissues sulphite crepe paper napkins, etc. Samples of the goods were distributed liberally and throughout the two weeks of the Exhibition the Interlake tissue Mills products were very much in the public eye.

The Dennison Manufacturing Company had an interesting exhibit demonstrating the many lines manufactured and carried in what might be termed the firm's art department. The Dennisons are big manufacturers of paper tags and handle many other specialty lines. Their Toronto office is at 160 Richmond Street, west, but in October the firm will move to 7 Wellington Street, East, Toronto. Demonstration of what can be made in art work from the firm's lines of tissues and other novelties was given at the booth and proved interesting to the many visitors.

Although the greater part of the space taken over by the British Columbia Government through the eastern commissioner, Mr. Lorne L. Brown, was given over to an exposition of the lumber resources of the province, one department was devoted to pulp and newsprint. Samples of newsprint manufactured in the

western province were on display while there could also be seen every ingredient and every stage reached by the finished paper in its progress from the tree to the paper-finishing machine. Legends were displayed setting forth the great growth of the pulp and paper industry in the province, 1918 producing a value in pulp and paper of \$4,062,724 which had jumped to \$12,554,257 in 1919.

The Abitibi Power and Paper Co. Ltd., have an attractive and instructive exhibit, the main features being some excellent samples of the company's product in the way of pulp and paper and the statistics so set forth that he who runs may read. One does not have to go right up to the exhibit to read that in the woods and forestry department no less than 27 camps are operated and well over a million and a half dollars a year paid in wages. The men employed number 1200 and the cords of pulp wood cut annually is placed at 163,000. The capacity of the newsprint mill at Iroquois Falls is 75,000 tons; groundwood pulp 35,000 tons and sulphite pulp 25,000 tons. The company is increasing its production from 25 to 500 tons of paper a day. Groundwood pulp from 320 to 550 tons and sulphite pulp from 137 to 175 tons a day.

W. J. Gage & Co., Limited, wholesale, and manufacturing stationers, Toronto, have an excellent display in the manufacturers building. A booth has been attractively arranged in which Holland Linen is extensively featured while other lines put out by the company are also effectively displayed.

**LIVERPOOL LACKS NEWS.**

Liverpool, August 30.—No morning papers appeared in Liverpool today for the first time in 112 years, and no evening papers for the first time in 50 years, as a consequence of a sudden strike of newspaper compositors here and in Manchester for more pay.

For the first time in more than three-quarters of a century the Manchester-Guardian failed to appear.

It is far better to give work which is above the man than to educate the men to be above their work.—Ruskin.

## British Trade News

(From Our London Correspondent).

London, 21st August, 1920.

In the British paper industry there is at the present time a big falling-off in orders and particularly with mills engaged in the manufacture of wrapping papers. This state of affairs is enabling mill owners to clear their books and people who did not expect consignments to be delivered at least two or three months hence are now surprised with sudden deliveries. Further, mills which refused prompt delivery orders in the early part of the year are now open to accept them and deliver the paper inside a month or six weeks, except in the case of white fine printing papers which, of course, are not easily obtainable owing to the constant demand for them in the large printing houses. Prices, however, are unchanged owing to the cost of raw materials. Mill owners are now able to get their houses into "ship-shape" and many of them are glad of the respite. It is rumored that the present dullness of the paper industry may reflect in the prices of raw materials. This, however, is impossible as all raw materials are imported and besides there is an official announcement that in September all freight car rates will be advanced which will have a tendency to increase not only the prices of raw materials but paper quotations may be affected by the sudden change.

### Pulp Situation.

Stocks of pulp are very fair in the country and the import returns are satisfactory. There is, however, a dullness prevailing the market at present and very little business is passing. Of course at this period of the year a dull market is expected and in another month we will see an unusual liveliness when contracts and winter orders are pouring forth. Shipments of unbleached chemicals and groundwood pulps still continue to arrive from Canada. Buyers are at present slow in fixing up future business; they want to see how prices will go, but the state of things in Scandinavia and in Canada will not relieve them in any way. In fact it is difficult to see how Scandinavia can reduce a quotation when one considers the price pulp mills pay for coal and the recent demands of labor, owing to the increased cost of living, and several other incidentals which all help to keep prices on a high level. No relief may consequently be expected from the continental makers of pulps. Canada is also faced with increased costs in manufacture. The U. S. A. is out of the pulp market here and supplies from Germany, Finland and Denmark are not on a large scale. So far as one can predict pulps will not ease off in prices this winter; if anything they may reach higher levels. There is a feeling that way.

### Technical.

The British Papermakers' Association has made further progress in putting the Technical Section into a business like body. An Executive Committee has been actually established and I hope we will have some good and interesting reports which will eclipse the work of the Canadian and American Associations. One would imagine that a body like the British Papermakers' Association, so long established, would have had a Technical Section years ago. But the war and the twentieth century has changed things in London. Mr. Arthur Baker of the Empire Paper Mills, Ltd. is the gentleman who saw the need for such a body and the

papermakers of Great Britain may take their hats off to him. He is the chairman of the Section now and in future will be supported by the following committee:—Mr. F. Heckford (John Dickinson and Co., Ltd.); Mr. J. Jemison (Empire Paper Mills Co.); Mr. J. H. Mowat (Peter Dixon and Son Ltd.); Dr. J. D. A. Macdonald (Tullis Russell and Co.); Major J. Edington Aitken (Inveresk Paper Co., Ltd.) who is vice-chairman; and Mr. J. Strachan (Donside Paper Co., Ltd.). Co-operating members are: Mr. R. W. Sindall (Sindall and Bacon); Mr. H. W. Hart (Wall-Paper Manufacturers, Ltd.) and the Secretary and Treasurer is Mr. A. W. Foster, B.A. (secretary to the Papermakers' Association). Now, this is a splendid committee—all practical men. When they come to give an account of their stewardships and the results of this research work, I hope we will have something to enlighten the industry as a whole. The men are on the committee who can make a good and interesting report.

### Canadian Paper and Boards.

During July the following were the imports of paper and boards from Canada:—

Printing Paper, 27 cwt., Writing Paper, 93 cwt., Other Manufactures, 123 cwt., Leatherboards, 200 cwt., Millboards, 19,344 cwt.

Scandinavia and Finland are Canada's greatest competitors in millboards and the same may be said in regard to leatherboards. No strawboard supplies were received from the Dominion in July. Supplies for the British market mostly came from the Netherlands, while the U. S. A. sent small consignments. The total supplies of millboards from all sources in pulp reached 69,914 tons and that of leatherboards 2,261 tons. The market in England is good for all kinds of boards.

### Cardboard.

There is a slump in the cardboard box trade at present. Manufacturers put the trouble down to the excess profits duty. Quite recently in some of the big centres attention has been paid to the production of the composite canister, for containing jams and other foods, which has a base and lid of tin and the walls or body consist of paper mache made from Canadian pulp. During the war this class of canister was much in evidence and has remained so ever since. There is, however, a decided dullness today in the industry as manufacturers of jams and other foods are not calling for these canisters owing to a want of activity in the country's merchandise. Some of the machines used in the manufacture of these canisters are of the American type and the pulp is all Canadian. Birmingham is one of the big centres of manufacture.

### ENLARGE PAPER MILL.

A building 60 by 300 feet is being erected by the Ontario Paper Company, Limited, at Thorold. A new paper-making machine is being added to the plant's equipment, and it is announced that the capacity of the mill will be thus raised from 230 to 300 tons of newsprint a day. The building of the plant addition is already well advanced.

Fighting the high price of print paper by controlling forest insects is one of the tasks before the New York State College of Forestry at Syracuse, which is having specialists study bugs which damage trees with a view to controlling their damage to growing timber.

# UNITED STATES NOTES

A rumor that the International Paper Company is to become a party to an impending huge merger of pulp and paper interests in Canada, has been nailed with a sharp denial from Philip T. Dodge, head of the company. Mr. Dodge authorized a statement last week from New York in which he declared most emphatically that the International is not proposing to part with its mills, control or sale of its products. "In addition to its various newsprint mills in the United States," said Mr. Dodge, "the company is now pushing to completion at Three Rivers, Canada, a mill with a capacity of 240 tons a day. It is expected that this mill will be in operation in the Summer or Fall of 1921. The International Paper Company is not engaged in profiteering or in stock promotions. The 400 publications to which it furnishes paper have been offered continuation of their existing contracts through 1921, limited only by the possible volume of our newsprint production."

Chairman W. B. Colver of the Federal Trade Commission, notified President Wilson last week that he did not wish his name considered for reappointment to the commission at the expiration of his term on Sept. 25. Mr. Colver stated in his letter to the President that he desired to retire from the Commission so that he can engage in private business.

Among the gatherings of paper trade organizations scheduled for the present month is the convention of the Cost Association of the Paper Industry which takes place at the Waldorf-Astoria Hotel in New York, Sept. 27 and 28, and the meeting of the Northern New York division of the Paper Mill Superintendent's Association of America, which is set for September 25 at the Hotel Rockwell, Watertown, N. Y. The American Pulp and Paper Associations' Fall business conference will be held at the Congress Hotel, Chicago, November 11.

In a statement given out last Friday from its New York office, the International Paper Company announced that the price of newsprint in rolls for the last quarter of 1920 will be \$6.50 for 100 pounds, or \$130 a ton. The price for the current quarter is \$115 a ton. Contract prices for newsprint furnished by the company are adjusted each quarter, the price to be changed being based on costs of production. The price for the first quarter this year was \$90, and for the second quarter \$100.

A \$500 fine and costs for the killing of a single fish was imposed recently by the Ohio State Supreme Court upon the Hager Board and Paper Company of Cedarville, Ohio. The death of this fish was cited in an affidavit charging the paper mill people with having permitted their refuse to run into streams, the consequent pollution causing destruction to the finny tribes. The charges against the paper and board company were filed by the State Game Warden, and the fine was paid by George Little and Albert Hager, officials. Deputy Game Warden Karl Keller in his deposition said that the state had gone to an expense of thousands of dollars to stock the streams. To replace the fish destroyed through the pollution, he asserted, would cost \$100,000 and would require six years. Deputy

Keller pointed out that under the law a fine of \$500 is the largest can be imposed, though a separate fine for each fish killed could be placed against the company. In view of the decision of the court in this action, it is probable that much new equipment will have to be installed in those paper mills along the Miami River which have hitherto permitted their refuse to run into the stream. Trouble from pollution has been caused in the past, but the destruction has been so widespread of late that the action taken was decided upon by the State Game department. The Hager Board and Paper Company, besides carrying the fine, promised the deputy that it would install a system of purifying the water.

By an arrangement just completed, American consumers of dyestuffs may purchase supplies from the stocks of the German product which have been set apart under the Versailles peace treaty as a part of the reparation to be made to allied Powers by Germany. The Textile Alliance, Inc., a non-profit taking organization created by the consumers, will be the medium through which the dyes will be distributed. The announcement telling of this arrangement was given out last Saturday by the War Trade Board Section of the State Department. Purchases will be permitted only of those dyes which are not being produced in the United States.

Chief executive officers and large stockholders of the General Chemical Company, the Solvay Process Company, the Semet-Solvay Company, the Barrett Company and the National Aniline and Chemical Company, Inc., have approved a general plan for submission to the respective boards, for the consolidation of the five companies, through an exchange of stock based on their capitalizations, the consolidated companies will be capitalized at \$200,000,000, it is stated.

Replanting of the devastated areas of the Adirondacks with spruce and other soft woods would ultimately solve the pulpwood and newsprint shortage, declared George S. Witham, of Hudson Falls, N. Y., in an address before the Technical Association of the Pulp and Paper Industry last Thursday at Saratoga Springs. Citing statistics to show that the quantity of spruce now standing in New York State may be exhausted in a very few years, Mr. Witham advocated the replanting of devastated areas unfitted for agricultural purposes, and the practice of scientific forestry on them under proper supervision by the state so that there would be provided "a permanent scientifically maintained forest, yielding successive crops of pulpwood and timber for other purposes."

Frederick A. Thompson, who died at his home in Westfield, Mass., last week at the advanced age of 92, had been actively engaged in the papermaking industry for 71 years. He began work when 13 under Zenns Crane and the latter's sons at Dalton, Mass., and when he retired in 1912 from the Cross Mills he had been foreman for 42 years, a record up to that time for tenure of service in the industry. Mr. Thompson's health had been good up to the time of the illness to which he succumbed.



# Technical Section



## REVIEW OF RECENT LITERATURE.

**A-3. Seaweed pulp for paper.** Paper, **26**, 264, (1920). A company has been formed in Japan for the manufacture of pulp and paper from the seaweed locally known as "ajimo". The supply is inexhaustible as it reproduces itself in less than 6 mos., and the cost of production is estimated as being 4.8 sen as compared with 6.5 sen for wood and 10.4 sen for sulfate.—A.P.-C.

**A-3. The esparto industry.** Ch. Grond. Papier **23**, 27-30, (Feb. 1920). A discussion of the esparto industry from an economic point of view more particularly as regards the distribution and working of the esparto producing regions and the utilization of the non-cellulose matters as fertilizers and feed.—A. P.-C.

**A-6. New forms of combustion apparatus for use in gas analysis.** E. R. Weaver and P. G. Ledig. U. S. Bureau of Standards. J. Ind. and Eng. Chem., **12**, 368-70, (1920). A description of an improved form of the Dennis and Hopkins combustion pipet, and of a combustion capillary of small size somewhat similar to those of Hempel and Levy, containing an electrically heated Pt wire. They are relatively easy to make and should be quite inexpensive if made commercially.—A.P.-C.

**A-12. Determination of the tensile strength of glue.** George Hopp. J. Ind. and Eng. Chem., **12**, 356-8, (1920). A method is described of preparing test strips of glue, which are then tested in an electrically driven Schopper tester with a capacity of 500 kg. The alignment of the jaws should be as nearly perfect as possible, as the slightest deviation will give poor results due to torsion and shear being set up. Results of actual tests run on commercial samples are given to show that the method gives a feasible way of determining the exact strength and stretch of a glue, its elastic limit, and other physical properties, thus permitting manufacturers to determine exactly the character of their glues, and to vary their processes and raw materials and determine the effect on the finished product. It will also permit the establishment of scientifically selected standards in absolute units. Further work is being done to determine the relation between physical and chemical properties, and tensile strength and stretch.—A.P.-C.

**A-12. Testing the strength of glue jellies.** Wilson H. Low, Cudahy Packing Co., Omaha, Neb. J. Ind. and Eng. Chem., **12**, 355-6, (1920). The Smith glue tester is by far the best and most sensitive tester on the market. The results obtained by it are improved by the use of mercury covered with colored water (instead of colored water alone) in the seal tube. There is no advantage in using air instead of water in the thistle tube. The scale is made movable in a vertical direction so as to adjust the zero mark opposite the water level. The method of using the instrument is fully described. (A description of the Smith glue tester will be found in J. Ind. and Eng. Chem., **5**, 25, 1913.—Abstractor's note).—A.P.-C.

**A-12. Fibre containing adhesive.** A colloidal method for increasing the volume of adhesive-water glass. J. D. MacGillivray, Mellon Institute of Industrial Research,

Pittsburgh, Pa. J. Ind. and Eng. Chem., **12**, 174-6, (1920); Paper, **26**, 16-8, (1920). See Pulp and Paper, **18**, 438, (1920).—A.P.-C.

**A-0. Automatic methods of gas analysis depending upon thermal conductivity.** E. R. Weaver, P. E. Palmer, H. W. Frantz, P. G. Ledig, and S. F. Pickering, U. S. Bureau of Standards, Washington, D.C. J. Ind. and Eng. Chem., **12**, 359-66, (1920). A new form of apparatus for the continuous analysis of gas mixtures, based on the rate of conductance of a gas surrounding an electrically heated wire, is described. Unlike previous deflection methods of limited application, a balance-bridge method applicable to the rapid and accurate detn. of constituents in a wide variety of gas mixtures of industrial importance have been developed. The adaptability of the apparatus for either manual or automatic recording operation is pointed out. Representative analyses showing the results obtained with apparatus constructed for the determination of H, N, CO<sub>2</sub>, NH<sub>3</sub>, and He in various gas mixtures are given. The construction of the special forms of apparatus required for this method is described. Plans for future work are outlined.—A.P.-C.

**B-9. French agricultural (timber and wheat) resources.** J. Micol de Portemont. Papier, **23**, 25-7, (Feb. 1920). From a comparative study of French and German productions of timber and cereals before the war, the author concludes that by a judicious development of its resources France can greatly increase its production both of timber and of cereals without mutual detriment and can become entirely self-supporting for these commodities.—A.P.-C.

**G-11. Separator for paper pulp.** U. S. patent No. 1,333,287, March 9, 1920. John White, Edinburgh, Scotland. Paper, **26**, 233, (1920). The separator consists of a vat or chest divided into compartments by upstanding and depending partitions so arranged that the path of the pulp is alternately downwards and upwards, whereby lighter undesirable particles are retained by the upper edge of an upstanding partition at the upper level of the vat and heavier undesirable matters are brought to the bottom and pass into a chamber below the vat.—A.P.-C.

**K-8. Ostwald's color theory in paper tinting.** Papier Ztg., **15**, (1920). Paper, **26**, 231-2, (1920). A review of the theory in its application to papermaking by a German papermaker. The Ostwald theory as it is now is of no practical value to the paper colorist, both because the color manufacturers have not yet put their manufacturing process on the same basis, and because slight variations in numerous factors (besides added color shade of raw materials, degree of beating, consistency, sizing, loading materials, calendaring, etc.) exert a marked influence on the color of the finished product.—A.P.-C.

**K-4: 7. Manufacture of paper from abaca bark.** (Manila hemp). U. S. patent No. 1,333,255 March 9, 1920. Akira Imaoka, Tokyo, Japan. Paper, **26**, 233, (1920). The outer bark of abaca is boiled in a weak (2.5 per cent) NaOH solution, thereby gelatinizing a peculiar kind of pectine contained in the non-fibrous portion of the bark. By beating by any suitable known



method, a stiff, tough paper is obtained without using any sizing material.—A.P.-C.

**K-9. Oyster shell composition for paper.** U. S. patent No. 1,334,513, March 23, 1920. Frank J. Baumgardner, Cleveland, Ohio. Paper, 26, 234. (1920). This patent covers the use of finely-ground (250-300 mesh) oyster shells as a filler to be used in the proportion of about 1 of filler to 5 of stock.—A.P.-C.

**K-10. The function of alum in rosin sizing.** E. Arnould. Papier, 23, 35. (Feb. 1920). Under proper conditions sizes will give satisfactory results whether they contain considerable free rosin or none at all. This is explained as follows: The sizing effects are due to free rosin. In the case of a neutral milk, the alum first reacts to form  $\text{Na}_2\text{SO}_4$  and Al resinate, which in its turn is partially or totally transformed into free rosin by the action of the excess of alum.—A.P.-C.

**K-11. The efficiency of paper-machine driers.** E. Salesses. Papier, 23, 30-3. (Feb. 1920). The "efficiency co-efficient" is defined as the weight of paper (in kg.) dried per hour per unit (sq.m.) of "evaporating surface," which is the product of the sum of the circumference of all the driers by the width of the sheet. Theoretically, this co-efficient should be constant for each machine, but it varies somewhat owing to variations in the operating conditions. Methods of calculating it and also the weight of paper dried per hour per unit of actual heating surface are given. The values given for the above values in *L'Industria della Carta* for June 1919 are not satisfactory because they do not take into account the fact that the sheet is not in contact with the whole surface of the driers, and also that the felt driers are not a part of the actual heating surface.—A.P.-C.

**K-20. New method of parchmentizing paper.** U. S. patent No. 1,333,165, March 9, 1920. R. H. Clayton, J. Hueber, and H. E. Williams, Manchester, England. Paper, 26, 235. (1920). The paper is passed through a hot solution (130 deg. C) of a thiocyanate, a mixture of thiocyanates, or a mixture of a thiocyanate and a salt which does not adversely affect the action of the thiocyanate and which itself may or may not have a parchmentizing action on the paper. The solutions may or may not be acidified with acetic acid (per cent. by vol.). The paper should be in contact with the solution about 15-30 seconds and is then washed and dried in the usual manner. (See Pulp and Paper, 17, 851, (1919).)

**L-5. Nitrocellulose from wood pulp.** R. G. Woodbridge Jr., Experimental Station, E. I. du Pont de Nemours and Co., Wilmington, Del. J. Ind. and Eng. Chem., 12, 380-4. (1920). An account of the experiments carried out by the du Pont Co. on the nitration of sulfite and soda wood celluloses for smokeless powder manufacture. The pulp, as prepared for paper manufacture, is insufficiently pure, severely overbleached, and in an entirely unsuitable physical condition. By suitable purification, sulfite cellulose was obtained which was satisfactorily nitrated on a large scale when mixed with an equal quantity of cotton linters, and the product was practically equal to that from straight cotton. It is not likely wood cellulose will be nitrated for smokeless powder for many years to come owing to the plentiful supply of cotton fibre; but nitrocellulose from wood may find an application in those industries where a nitrocellulose with low viscosity is desired.—A.P.-C.

**R-1. The chemical pulp industry in Finland.** Papier, 23, 39-40, (Feb. 1920). A description of the Varkaus Cellulose Factory, Varkaus, Finland. (This was translated from the "Finnish Paper and Wood Industry," Oct. 31, 1919, and reproduced in Pulp and Paper, 18, 193-4, (1920).—A.P.-C.

**R-5. Extracts from the report to the French Government of the "Office National des Papiers autres que ceux de la Presse."** Papier, 22, 255-6. (Aug. 1919); 279-81. (Sept. 1919); 308-10. (Oct. 1919); 336-8. (Nov. 1919); 23, 40-4. (Feb. 1920). A detailed review of the present situation of the Fr. pulp and paper and allied industries and of the protective measures which should be adopted to enable it successfully to tide over the transition period during which it will be laboring under great difficulties.—A.P.-C.

**R-5. The French paper trade during 1917, 1918, 1919.** Rev. Univ. Papeterie, 3, No. 15, 5-8. (March 15, 1920). A detailed statement of the paper trade of France during the years of 1917, 1918, 1919. A.P.C.

**R.0.—Technical men in the Paper Industry.** H. P. Carruth. Pulp & Paper, 18, 126-7. (1920). Paper, 25, 1151-2. (1920). The great need of the day is for the application of religion in the factory, office, store, bank, etc. As the technical man is looked up to more and more as a leader it is his duty to set the example. A. P. C.

**R.0.—How to equip and operate an experimental pulp and paper laboratory.** Otto Kress, Sidney D. Wells, and Vance P. Edwardes, U. S. Forests Products Lab., Madison, Wis. Pulp & Paper, 18, 588-91, 619-22, 647-9, 671-2, 699-701. (1920); Paper, 41-4. (June 2, 1920), 24-7. (June 9, 1920), 19-23. (June 16, 1920), 23-5, 32. (June 23, 1920). A description of the equipment of the experimental pulp and paper laboratory at the U. S. Forest Products Lab. at Madison Wis., together with explanations of the reasons which led to the adoption of the given types of apparatus. A. P. C.

**R.0.—English paper technology examination.** Papier, 26, 12, 36. (June 16, 1920). Questions set in a recent final examination in paper manufacture under the auspices of the City and Guilds of London Institute. A. P. C.

**R-0. Protection of the Belgian paper industry.** B. Franklin. La Papeterie, 41, 355. (Sept. 25, 1919). Conditions in Belgium are such that the import licence system should be maintained with regard to German products. This is due to the low rate of exchange of the mark, which has fallen to 35 centimes; to the non-delivery of the coal which the Germans are to send according to terms of the peace treaty; to the "dumping" policy of the Germans, which was one of their favorite commercial weapons before the war, and which is particularly favored by the actual low exchange value of the mark.—A.P.-C.

## WORK HAS BEGUN ON MILLS AT NIPIGON.

The Thunder Bay Harbor and Improvement Company has been awarded the contract for erecting the pulp and paper mill at Nipigon for the Nipigon Fiber Paper Mills, Limited, in which the principals are Col. J. A. Little and W. H. Russell, of Port Arthur. Work has already been started on the mill, which will be of fifty ton capacity for its initial unit, and will be in operation by the end of December. The mill is to be situated one mile west of Nipigon, and the Canadian National Railways is already putting in a spur track

# PULP AND PAPER NEWS

A visitor to the Toronto office of pulp and paper Magazine of Canada this week, was Mr. H. M. Mosdell, managing editor of the St. John's Daily Star, Newfoundland's home paper. Mr. Mosdell, who has made a name for himself in Canada's eastern outpost at one time had the prefix "Dr" to his name. That was after he got through the medical department of the University of Toronto. It was while attending college that he developed a taste for newspaper work and an outlet for his talent was found in the editorial pages of the Toronto Sunday World. He was on the staff of the World for some time and it was while doing newspaper work in Toronto that he was called to the Star, in Newfoundland by Premier Squires. As managing editor of that very excellent paper, Mr. Mosdell has figured largely in building up a first class newspaper property which bears the imprint of his strong personality and ability. He is on his way back from the west after having accompanied the Imperial Press Conference as a delegate from Newfoundland.

Mr. J. Hewitt, of Paper Sales, Limited, Yonge St., Toronto, is spending his holidays at Burlington Falls.

Mr. V. T. Haney, Toronto representative of the Rolland Paper Company, Ltd., has returned from several days spent at the company's mills near Montreal.

Lieut.-Col. Thomas Gibson, vice-president of the Spanish River Pulp and Paper Mills, Limited, Toronto, is spending a couple of weeks vacation in Muskoka.

To carry on the business of lithographers, printers, etc., the Engravers and Die Sinkers, Limited, has been granted a charter by the Ontario Government. The capital stock is \$40,000 and the provisional directors are Frances Forsyth, F. J. Forsyth, F. B. Marcellus and M. L. Kirk, all of Toronto.

Paramount Paper Boxes, (Toronto and Hamilton), Limited, has been organized and has been granted a charter by the Ontario Provincial Secretary's department for the purpose of carrying on a manufacturing paper and paper box business, etc., and to operate a printing plant. The head office is Hamilton and the company is capitalized at \$10,000. The provisional directors are: W. R. Thompson, C. B. Ellison, F. J. Price, D. H. Drake and J. E. Precious, all of Hamilton. Another organization to be granted a charter, Reid Bros., who are authorized to engage in a general printing and lithographing business, with allied industries, with head office at London. The authorized capital is \$250,000 and the incorporators are: G. M. Reid, and G. E. Reid, manufacturers; S. M. Jepson, accountant; W. Smithson, traveller, and William Kippen, salesman, all of London, Ont., where the head office of the company will be located.

Mr. John F. Ellis, of the Barber & Ellis Company, wholesale stationers, Toronto, has returned from a holiday trip to Muskoka and Lake Simcoe.

A new manufacturing stationery firm is about to start operations in Toronto under the firm name of Sinclair, Allen & Co., Ltd., who have secured one of the floors in the new Daylight Saving Building, 366 to

378 Adelaide Street, west. The principals of the company are Norman A. Sinclair, a former member of the executive staff of Warwick Bros. and Rutter, Toronto and more latterly sales manager of Charles E. Weyand & Co., New York. Thomas Allen, the well-known publisher at 215 Victoria Street, has moved his plant and stock to the new building on Adelaide Street and the two companies will combine their selling forces, although they are separate organizations. The Sinclair, Allen Company state that their efforts will be directed to making in Canada the better grades of papereries, note papers, writing tablets, envelopes, etc.

Mr. J. E. Middleton, for some years on the staff of the "Toronto World" and the old "Toronto News", has been appointed director of Public Health Education under Dr. J. W. S. McCallough, Provincial Medical Officer of Health.

Newspapermen from various parts of Canada, but chiefly Ontario, were guests of the Canadian National Exhibition in Toronto on Friday last when they were tendered a luncheon by the directors and given the freedom of the grounds. Following the luncheon there were a few informal speeches in which the cooperation of the pressmen in making the fair the great success it has become was acknowledged by the directors of the Exhibition.

The annual report of the Spanish River Pulp and Paper Mills, Limited, issued in Toronto this week, furnishes a good illustration of the thriving condition of the industry in Canada. The report is for the year ending June 30th last and it is recalled that the company, which was on the verge of a receivership six years ago, when it was reorganized on behalf of the shareholders, has made a remarkable recovery by reason of favorable conditions in the trade and good management. During the past two years especially has the improvement been marked until now the arrears of dividends on preferred stock, amounting to 42 per cent, have been met in one year by an issue of new stock. The report shows an increase of net earnings over the previous year of more than 41.9 per cent. This showing, together with working capital of over \$6,600,000 and reserves of over \$3,500,000 is an encouraging feature of the statement. According to the statement of President George H. Meade, the production at all the plants of the company continued satisfactorily throughout the year and with normal water supply and the completion of the two new paper-making units at Espanola the net earnings for the year showed a substantial increase. It is expected that the total output this year will be considerably greater as the Espanola extensions were only recently completed and all plants have now been advanced to a high state of efficiency.

Mr. J. A. Bothwell, who is making an extended trip to England and Scandinavia with Mr. Geo. F. Steele in the interest of the Canadian Export Paper Co. has started on the homeward way. A card just received from Mr. Bothwell says that Finland is now in the rear.

The Abitibi Power and Paper Co. is preparing to install equipment for burning bark and other refuse at the boiler house. The plant will consist of two batteries of boilers of 500 h.p. each. The bark will first be pressed and then gradually dried on special grates. Pressed bark, 40 per cent dry, from one cord of wood is equivalent to 50 lbs. of coal.

A report from Fredericton, N.B., says that the Fraser Companies, Ltd., are about ready to start work under the charter obtained last spring. The new project, which includes a huge power plant at Tobique Narrows, involves a development scheme of some \$10,000,000.

The Laurentide baseball team on Labor Day defeated Anable Works, N.Y., at Grand Mere, 7 to 2.

The Gold Bricks of Timmins recently beat Iroquois Falls, 3 to 0 and the team standing is now a tie.

### Quebec Pulpwood Auction

It is understood that the Quebec Government is planning to put up at auction before the end of the present year some extensive pulpwood limits in the St. Maurice district.

### Paper Bags to be Made in Winnipeg

A company is being organized in Winnipeg to manufacture paper bags. It will be known as the Western Canada Paper Bag Co. A. Seabrook is the promoter, and equipment to cost some \$50,000 is being purchased for the plant.

### Finnish Paper Industry Reviving

A rapid rejuvenation of the paper industry in Finland is reported by the American Red Cross. Giving figures upon the industry, the bulletin says:

"Although export trade was impossible for eight months during 1919, owing to shipping restriction effective in Europe, 46,000 metric tons of paper were exported from Finland. Virtually all of this was supplied to fifty of the largest periodicals in England, a new market exploited by the Finns after the breaking up of the Russian market."

### Western Canada P & P Bonds

Messrs. Graham, Sanson and Company are arranging for a flotation of 7 per cent mortgage serial gold bonds of Western Canada Pulp and Paper Co. Ltd., maturing between February 1, 1923, and February 1, 1940. Besides the \$1,000,000 bond issue in question the company's capital consists of 25,000 shares of common stock of no par value and \$1,200,000 6 per cent mortgage debenture stock due February 1, 1950.

### MACHINERY FOR CAPE BRETON PULP CO.

Six carloads of machinery are being unloaded for the Cape Breton Pulp and Paper Company, St. Ann's, and will be conveyed thither in scows and other craft. Among the shipment are a small railway locomotive and trucks, engine and air compressor besides the first instalment of 100,000 feet of heavy timber to be used in building two large booms at St. Ann's. The work of constructing these booms will occupy some few months and preparatory to work on the booms various wooden buildings have been erected including one 24x92 for workmen besides office building and quarters for foremen. In the construction of the booms cribs 32x16 will be placed at hundred foot intervals and the main boom will be about 1300 feet long. A second boom will be built farther up the river. Both will be of sufficient strength to resist the heaviest pressure that may be put upon them.

### TRADE OPPORTUNITIES.

The Department of Trade and Commerce at Ottawa has announced the following opportunities for trade in pulp and paper:

1532. **Paper.**—A commission agent in Roumania is anxious to receive quotations and samples from Canadian firms in a position to export writing, blotting and silk papers. Following is a table of sizes and weights of papers used in Roumania:—

Size	Weight per 1,000 sheets
34 x 42 centimetres . . . . .	from 6—12 kilograms
42 x 68 " " " " " " " " " "	12—25 " "
38 x 48 " " " " " " " " " "	8—10lb " "
40 x 50 " " " " " " " " " "	12—30 " "
50 x 80 " " " " " " " " " "	24—40 " "
42 x 52 " " " " " " " " " "	10—16 " "
44 x 56 " " " " " " " " " "	16—24 " "
27 x 43 " " " " " " " " " "	5—12 " "
54 x 81 " " " " " " " " " "	25—40 " "
50 x 65 " " " " " " " " " "	24—40 " "
58 x 80 " " " " " " " " " "	18—30 " "
80 x 116 " " " " " " " " " "	40—60 " "
65 x 96 " " " " " " " " " "	25—80 " "

The centimetre approximates .3937 inches.

The kilogram approximates 2.204 lb.

1533. **Woodpulp.**—A Manchester firm is in a position to import woodpulp, or would represent manufacturers of same.

1534. **Paper.** A firm in Calcutta, India, wish to get into touch with Canadian manufacturers of different classes of paper with a view to representing them in India, Burma and Ceylon.

1535. **Kraft papers.**—Glasgow firm would be glad to get in touch with Canadian manufacturers of Kraft papers.

1536. **Woodenware.** Importer in Scotland is prepared to open negotiations with Canadian firms who manufacture washboards, and clothespegs; also handle rakes, hoes, and digging forks.

### TO MAKE ABRASIVE PAPERS IN B.C.

The Government of British Columbia has granted a loan of \$22,000 at 6 per cent to assist the establishment of a plant by the Canadian Abrasive Company, Ltd., for the manufacture of sand paper, emery paper etc. This material has been imported from the United States at a rate, according to the Vancouver "Sun," of over a million dollars a year (see editorial page).

With all the ingredients available in British Columbia, Mr. J. L. Near about a year ago started experimenting with the idea of evolving a process whereby the product might be produced in Canada. He interviewed Major Martyn with the result that the latter got into touch with capitalists, among whom were Mr. Moore, of the Canadian Explosives, Ltd.; Capt. D. S. Bullen, Col. Lorne Ross and others and a company was organized with a capital of \$100,000. The new plant and equipment will cost approximately \$50,000; and it is towards the acquisition of this plant that the government loan will be devoted. A site for the plant has been secured on Mason Street, in Victoria, and work on the construction of an experimental plant is underway. Employment will be given to about twenty men at the start. Paper manufactured at the Ocean Falls mill will be used and there is an unlimited supply of the required hard rock for the manufacture of the abrasive paper.

**CANADIAN TRADE CONDITIONS.**

Toronto, Sept. 4. While the same general conditions exist in the pulp and paper trade it has been quite apparent that there has been an easement in orders to the jobbers and a little freer shipment of goods from the mills to the jobber. The latter class are bearing testimony to the fairness with which the mills have been treating the distributors during the present era of prosperity and ups and downs of manufacturing. As a result of a policy of frankness on the part of the mills the jobbers have been made exactly aware of the handicaps under which the mills have been operating in respect to the shortage of raw materials, high cost of fuel and labor and the difficulties generally that have combined to make manufacturing difficult, with the result that both distributors and consumers for the most part are convinced that they have been treated as fairly as possible by the mill men. In practically every instance where shipments have been delayed or orders refused the mills have been at pains to let the reason be known and if prices advanced the causes were set forth. All this has resulted in good relations and an excellent understanding as to pulp and paper conditions between the manufacturer and the distributor.

**Skilled Workers Needed.**

A feature in the paper trade at the present time is the need for skilled men in the wholesale end of the business. It was pointed out by one of the paper houses in Toronto this week that the trade was suffering through a dearth of expert men—men who could handle and sell paper. It seems to be a fact that an insufficient number of men have been brought into the business and trained and it is contended that there is almost as much room for technical education in the selling end of the game as there is in the mill end. However that may be, a leading jobber told the Pulp and Paper Magazine in Toronto this week that there was lots of room for expert men in the business in Canada and that he would like to see some sort of steps taken to train young men in the handling of paper, as it is proposed to train them in the manufacturing of it.

**Coated Paper Sold Up.**

Coated paper mills are having an exceedingly busy and prosperous season and most of them are sold up to December and later. The Ritchie & Ramsay mills at New Toronto report that they have orders enough for coated paper to keep them going until December and the Georgetown Coated Paper Mills, Limited, are similarly situated. The latter company has just completed some extensive improvements, the old plant having been duplicated by a building 60 x 300 feet, part of which is four storeys with basement. The addition has been built onto the old building and will be used as a storage, finishing and machine room. The management will afford accommodation for eight coating machines in place of the four now in operation. Two machines are now at the plant ready to be set up and the company expects that before a great while the full complement of eight will be running. Other im-

provements have been added and included in the machinery equipment is a Holland drive system. The company quotes No. 1 coated book at 21½¢ and No. 2 at 20½¢. Another mill quotes No. 1 machine finished book at 19½¢, but will not promise delivery before February, there being enough orders already in to keep the mill running until that time.

**Pulp.**

The pulp market, both chemical and mechanical, continues to run wild and very little can be had at any price. Although the prevailing price for groundwood pulp is in the neighborhood of \$150, it is known that a Toronto mill this week offered to pay the demand price of \$170 for a shipment of groundwood pulp and it is expected that the sale will be made at that figure. The same firm paid \$200 for unbleached sulphite at Port Arthur and will have to pay the freight down. Bleached sulphite is correspondingly scarce and high in price and the testimony of all the paper mills is that it is almost impossible to get pulp from any source whatever.

**Sulphite Bonds Are Up.**

The week saw an advance of 2c a pound on all sulphite bonds. Sulphites are now quoted at 19½¢; light tinted at 20½¢ and dark tint at 21½¢. This line of paper was the only one to jump forward during the month and it is generally understood that the prices now prevailing for most lines will hold good for September.

**Wrapping Papers.**

The demand for wrapping papers keeps up and the jobbers say that supplies are just as scarce as ever. Instead of being able to stock up the warehouses are getting very low and are unable to meet the demands that are being made on them by clamoring customers.

**U. S. PAPER PRODUCTION UP 22 PER CENT.**

It is interesting to compare the production of the principal grades of paper by mills in the United States in July 1919 and July 1920, as shown in the following table prepared from a report of the Federal Trade Commission.

	July 1919	July 1920
Newsprint (Standard and Special Grades of News Standard News, etc.)	113,929	129,855
Book (M.F., S.S.C., and Coated)	101,850	118,816
Paperboard (Total) (Straw Fibre, Leather, Chip, Etc.)	75,613	95,526
Box Board	169,593	218,771
Wrapping (Kraft, Manila Fibre, etc.)	63,769	73,487
Bag (all kinds)	15,931	19,055
Fine (Writing, Bonds, Ledgers, etc.)	30,036	31,078
Tissue (Toilet, Crepe, Fruit Wrappers, etc.)	11,685	16,850
Hanging, (No. 2 Blank Oatmeal, Tile, etc.)	6,643	9,037
Felts and Building (Roofing, Sheathing, etc.)	29,402	33,053



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Other grades & Specialties not otherwise classified.	19,260	28,808
Total of all grades . . . . .	538,864	658,518

Note.—The average production based upon the annual reports for 1917, 1918 and 1919 was slightly below the figures for July 1919.

Stocks of all grades except newsprint, bag and tissue increased during the month. Stocks of all grades reported by manufacturers at the end of July amounted to 172,568 tons, including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported newsprint stocks and tonnage in transit aggregating 209,092 tons.

#### Ratio of Stocks to Average Production.

Comparing the stocks on hand at the domestic mills on July 31, with their average daily production based upon the combined production for years 1917, 1918, 1919 the figures show that :

Newsprint paper mill stocks equal about 5 days' average output.

Book paper mill stocks equal slightly less than 8 days' average output.

Paperboard mill stocks equal slightly more than 6 days' average output.

Wrapping paper mill stocks equal slightly less than 10 days' average output.

Bag paper mill stocks equal slightly more than 4 days' average output.

Fine paper mill stocks equal slightly more than 25 days' average output.

Hanging paper mill stocks equal slightly more than 5 days' average output.

Felts and building paper mill stocks equal slightly more than 13 days' average output.

Miscellaneous paper mill stocks equal slightly less than 20 days' average output.

Total paper mill stocks of all grades equal slightly less than 9 days' average output.

Tissue paper mill stocks equal slightly less than 12 days' average output.

The time lost in July 1920 was only half the loss in July 1919. Much of this was due to lack of water power, coal and material.

#### Pulp Production in the U. S.

The following is a tabulation of the production and stocks of finished pulp, in tons of 2,000 pounds on an air-dry basis, for July, 1920, prepared from the monthly review of the Federal Trade Commission:

	Production	On hand for month end of month
Groundwood pulp . . . . .	123,330	137,440
Sulphite, News Grade . . . . .	70,563	14,162
Sulphite, Bleached . . . . .	49,637	3,808
Sulphite, Easy Bleaching . . . . .	6,370	675
Sulphite, Mitscherlich . . . . .	7,196	1,142
Sulphate Pulp . . . . .	18,514	2,248
Soda Pulp . . . . .	36,005	3,738
Other than Wood Pulp . . . . .	719	108
Total for all Grades . . . . .	312,334	163,322

Total stocks of all grades of pulp in the mills on July 31 amounted to 163,322 tons. Mill stocks of easy bleaching sulphite and other than wood pulp increased during the month. All other grades decreased.

#### Ratio of Stocks to Average Production.

Comparing the stocks on hand at the domestic pulp mills at the end of the month with their average daily production based on the reports covering the years 1917, 1918 and 1919, the figures show that :

Ground wood mill stocks equal slightly more than 30 days' average output.

News grade sulphite mill stocks equal slightly less than 6 days' average output.

Bleached sulphite mill stocks equal slightly more than 2 days' average output.

Easy bleaching sulphite mill stocks equal slightly less than 3 days' average output.

Mitscherlich sulphite mill stocks equal slightly less than 5 days' average output.

Sulphate mill stocks equal slightly less than 5 days' average output.

Soda pulp mill stocks equal slightly more than 3 days' average output.

Mill stocks of "other than wood pulp" equal about 3 days' average output.

Total mill stocks of all grades equal slightly more than 15 days' average output.

Only about a third as much time was lost in July 1920 as in July 1919. Of the 108,350 total machine hours lost, grinders were down 47,016 hours due to water and power conditions.

Electric wires which touch trees can easily kill the most beautiful shade tree. This may be partly due to the work of the electric current, or to the wearing through the growing surface of the tree by the wire, which deprives the tree of its sustenance.

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**FACTS ABOUT ALASKA.**

Manufacturers of pulp and paper in British Columbia and Alaska have little to fear from each other and much to gain in the common development of the Pacific coast region.

The Act of Congress of February 1, 1905, allows the exporting of pulpwood and wood pulp from the National Forests of Alaska, and the Act of June 4, 1897, authorizes the sale of timber on all the National Forests. Perhaps B. C. mills will some day import Alaskan pulp wood.

The Alaskan National Forests not only contain approximately 100,000,000 cords of pulpwood timber, but also the second chief essential of a paper-manufacturing industry—enormous water power possibilities.

It should be understood that timber is sold from the national Forests of Alaska only for immediate and

continuous operation, and that the general policy or form of contract does not permit the acquirement of timber on a speculative basis. Canadian regulations are now designed to prevent this also.

Fifteen water power projects in Alaska were developing a total of 37,350 horse-power in 1917, for the region of south-eastern Alaska. These plants furnish power for mining and various other industries. The largest plant in south-eastern Alaska develops 5,700 horse-power.

The Forest Service is allowed by law to sell stumpage only from the National Forests. The purchaser of timber has no cut-over problem, since the Government retains title to the land. Any legitimate use of the land incident to the development of the project is allowed at a nominal consideration, or for some uses, free of charge.

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# Pulp and Paper Magazine

## OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., Sept. 16th 1920.

No. 38

### TABLE OF CONTENTS

#### Editorial:

British cash welcome to Canada	961
Seductive literature	962
Contempt for trees	962
The Association's hand book	962

#### Special Articles:

On the substitution of aluminum sulphate in paper making	963
An automatic continuous mixing system for paper stock	965
What <b>T A P P I</b> did at Saratoga	967
The Kapawa plant of the Rorden Company	971

#### News of the Industry:

"House Organists" to have idea exchange	964
Dryden to make ground wood and board	966
The Fort William Paper Co.	966
Paper Securities as permanent investments	978
The Lake St. John Pulp and Paper Co.	979
British trade news	980
Pulp and paper news	982
Micro-organisms in old papers	983
Regarding shipments to West Indies	983
Hammermill buys Quebec timber	983
Chamber of Commerce at Paris has active Canadian section	986
The pulpwood industry of Gaspé	988
Manitoba pulpwood locked up	988
Behind in coal	988

#### The Markets:

Canadian trade conditions	984
New York markets	985
The market for chemicals and feeds	986



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The fisherman with his little boat, equipped with a Type "M" Engine, the coastwise boat with its "C.O." Power, the farmer who has solved his labor problem with Fairbanks-Morse power farm equipment, in every great industry—mines, mills, factories and railways. Fairbanks-Morse products are used.

The presence of Fairbanks Morse mechanical equipment everywhere is the real tangible evidence of confidence that is placed where quality counts and in service that brings seller and buyer together in a closer relationship which builds for the benefit of all.

This is the reason that The Canadian Fairbanks Morse Co., Limited, has adopted the 100% quality seal as its standard.

When you place an order with any salesman you are having both service of product, and service of organization.

Our experts are always ready to help work out your problems and are always as close to you as our nearest branch house.

### The Canadian Fairbanks-Morse Co., Limited

Canada: *Experiments, B. & C. M. Co., Ltd.*

Hullfax St. John Quebec Montreal Ottawa Toronto Hamilton  
St. Catharines Windsor Winnipeg Saskatoon Regina Calgary  
Vancouver Victoria





# EDITORIAL



## BRITISH CASH WELCOME TO CANADA.

One of the most important results from the Imperial Press Conference, as far as Canadian industry is concerned is the enormous amount of advertising which the possibilities of developing our natural resources will get. In speaking of this phase of the conference we would in no way minimize the great value to all parts of the Empire which will result from the intimate contact and fellowship which the delegates enjoyed during their tour of the Dominion. A newspaper man represents as well as, and in some cases better than, a politician, the sentiment of his constituency and at the same time is more of a leader. This leadership, which rests largely on the opportunity and ability to spread information, will be sure to have a considerable effect on the future of Canadian industries insofar as there is a chance for investment of British capital in Canadian opportunities.

The delegates have repeatedly expressed their wonder at the vast resources of the Dominion, especially as regards area and richness of soil, mineral deposits, fisheries, timber, and water-powers. These constitute the fundamental wealth of any country and require only labor, capital and brains (management) to convert them into terms of international exchange. Being newspaper men the delegates naturally were deeply interested in the forests and water-powers upon which their ability to carry on their business is becoming increasingly dependent. They were interested also in the many modern pulp and paper mills and wondered greatly at the size and efficiency of these plants. From the remarks it is evident that they were greatly impressed and no doubt their opinions and remarks, while not exaggerating the situation, might be taken as persuasive arguments in favor of the investment of British capital in the Canadian Pulp and Paper Industry. That is one of the results which we hope will follow the return of the press delegates to the home country. The situation is one, however, that may be manipulated to the immediate and considerable financial advantage of the holders of stock in some of our Canadian mills.

In fact there have been persistent rumors of a huge merger of concerns in Eastern Canada. It is one thing to combine closely associated plants, the outlet of whose produce is concentrated in a certain line, or where such combination will result in great increase in efficiency and decrease in cost of production. It is another thing to engineer a consolidation of interests

in order to provide an excuse for the issue of stock unsupported by actual investment or other increase in tangible assets, especially if the individual units whose combination is contemplated are already operating efficiently and whose raw material, overhead expenses, and lines of production are already well balanced.

Another phase of the matter regards timber supply. In travelling over the Dominion the delegates from overseas saw considerable quantities of timber but did not begin to see the great stretches of virgin forest that lie behind the areas convenient to transportation which have been so largely cut out and burned over in the days of the recklessness of Canadian lumbermen and pulp and paper manufacturers. Members of the Conference who may have been privileged to see a real forest would probably have been willing on the spot to take considerable stock in a company based on such a firm basis. It is possible, however, that the timber looked at was not typical of the stand on the whole of the area available. Furthermore a pretty water fall does not always indicate abundance of power, which is a prime requisite in these days when groundwood is such a predominating factor in the industry, especially in the production of newsprint paper. There are areas with plenty of timber to warrant the erection of a considerable pulp and paper mill and with plenty of available water power to insure continuous operation. There are other areas where these essential factors are not present in sufficient quantity. It simply rests with the potential investor to look into the proposition he contemplates putting his money into. The Canadian pulp and paper industry we believe to be as sound an economic proposition as there is to be found. The investment of British capital will not only bring a good financial return but will have the advantage to those consumers who desire a larger proportion of Canada's pulp and paper production that their financial interest will be an attraction and a reason for shipping more pulp and paper to Britain.

In short, we want to see more British capital in the Canadian pulp and paper industry, but we don't want to see it invested in junk, burned forest or water from any city supply.

Cotton enters into the names of four kinds of paper pulps—cotton rags, cotton-hull fibre, cotton stalks, and cotton wood, the last having no connection with cotton

### SEDUCTIVE LITERATURE.

Seductive and seditious are not synonymous, but are often nearly so. At the meeting of Canadian Clubs at Montreal last week a resolution was introduced, the object of which was the exclusion of Hearst publications from Canada. The root of the matter lies in the anti-British statements, sometimes veiled, that appear in the Hearst papers. In the United States, and elsewhere, during the war, W. R. Hearst was known as a pro-German. Now he is accused of disseminating propaganda intended to stir up trouble between Britain and her friends and relatives on this side of the Atlantic. Some rather rank stuff has appeared in print, and it is no wonder that good people have taken offence.

A lively discussion of the matter took place at the meeting, when, after it was pointed out that other than Hearst papers were not free from fault, the original resolution was amended, and the meeting finally endorsed the following:

"That the attention of the Dominion Government and the Canadian Clubs be brought to the attention anti-British propaganda voiced by certain Hearst publications circulating in Canada, and that it be a matter of recommendation to the Canadian Clubs that they take apt measures to counteract such propaganda."

It was suggested some time ago, through the columns of an American paper journal, that patriotic paper mills could effectively combat such propaganda by refusing to sell paper to such a publisher. Such an attitude would be a laudable one to take, but we do not believe it would work. Money will buy a paper mill. If the papers are seditious, the Government has a remedy, if they are libellous, the plaintiff has the courts. We have no sympathy with Hearst's attitude, but we feel that the best preventative of contagion from his microbes is thorough inoculation with patriotism and intelligence through the press, the public school and the pulpit. Trade unions, clubs and associations should also take up the problem and the task of fostering friendly relations with all peoples, especially those of our own race and language.

### CONTEMPT FOR TREES

A beautiful summer is nearly past, and autumn will soon be here. Many Canadians, as well as the strangers within our gates, have enjoyed the beauties and the rest and the healing balm to be found in Canada's woods. The coming season will soon be on, and a camp fire will add to the comfort of the hunter, from the woods. Will these hunters only respect, consider the tree, as friends to be loved and protected, or just wood? In many cases the latter is true. Truly a reflection of the home surroundings of the individual. Does his city or town not pollute its trees? Are they protected from

caterpillars, fungi and insects? Are trees planted to beautify the streets and parks? Then the chances are that the individual will be careful of his camp fire, his matches and pipe ashes. To foster a love of trees by more attention in the school room and press and pride in these sturdy beautifiers of the highway is to plant in the mind of the citizen a desire to protect the forest. On the other hand, if the community does not show a proper respect for its trees, the citizens are quite likely to have contempt for the forest.

### COBWEBS.

In a British Columbia town recently there was a meeting to consider steps to be taken in the establishment of a pulp mill at that place. It seems that there is sufficient power and pulpwood. In order to make sure that the citizens were deeply interested in the matter and that the proposition would be supported locally a subscription paper was passed asking for subscriptions of \$5.00 apiece from those who were interested. We understand that some forty persons expressed themselves as being willing to put up the necessary \$5.00 and that consequently the success of the enterprise could be considered as assured. Somebody may get away with that idea but we suspect it would be well for some of those people to go a little further into the cost of establishing and operating a mill before they risk so large a sum. Then when they find how good a proposition a mill is, if all the factors are favorable, they will be glad to invest the much larger sum that will be required.

It is reported from Toronto that Premier Drury was approached by the Backus interests on behalf of their application for a lease of some 2500 square miles of forest. The statement was made that the Lake of the Woods Limits, consisting of 1860 square miles were said to contain sufficient pulpwood for a hundred ton mill for thirty years, that the limit was acquired on this basis but was found later to have been so disastrously burned over that nothing like this quantity of pulpwood could be taken out. It seems to us that this situation indicates three points to be given attention. In the first place there should be a reasonably accurate survey of forest lands, secondly there should be more adequate fire protection, and thirdly the purchaser or lessee of timber limits should assure himself by an independent survey at least approximately of the timber he thinks he is getting.

### THE ASSOCIATION'S HAND BOOK.

Since mention was made a few weeks ago that the Canadian Pulp and Paper Association has completed a comprehensive handbook of the pulp and paper industry in Canada, we have received numerous inquiries regarding it. Readers of the Pulp and Paper Magazine who desire copies should write to the Secretary of the Canadian Pulp and Paper Association, 701 Drummond Building, Montreal.

# On the Substitution of Aluminum Sulphate in Paper-Making

By MAX CLINE, Bureau of Tests, International Paper Company, Glens Falls, N. Y.

When our worthy secretary paid us a visit a few weeks ago he found us fairly contented. Except for a shortage of cars, wood, wood pulp, coal and pronounced delay in getting other supplies the mills had no worry. It was true that a friendly rivalry between the Woodlands and Purchasing Departments existed as to which would first have to shut down the mills. The sympathy of the chemical section leaned towards the Purchasing Department for if the mills are shut down for lack of wood you can call it an act of Providence, an affliction of the railroad collapse, or an imposition of the Quebec Government, but if the mills are threatened with a shut down for lack of a material obtained through the Purchasing Department some one or other is apt to want to know why the chemists were not prepared, or are not prepared, to offer a substitute that is "just as good".

The secretary brought with him the depressing news that there was a marked shortage in aluminum sulphate and that a number of mill owners were alarmed at the situation. We could hardly believe the news. There was no shortage in sulphuric acid and alum is its direct offspring. It is true that the supply of Bauxite is closely held but alum is made as well from Clay and Cryolite so that its sources are varied and plentiful.

Whatever is the cause for the sudden shortage in the supply of aluminum sulphate, it, nevertheless, stares us in the face. To think that this lowly but very useful paper-making material should suddenly go back on us! Its use in paper-making has become hoary with tradition, predating wood pulp and the paper machine. It seems to be the last straw, and like Caesar we exclaim, "Et tu, Brute!" What is to become of the large school of paper makers who cure their ills by liberal consumption of alum? Who, for example, double their furnish of alum when pitch begins to form on the wire? How many of you have heard some such order in the beater room as this: "Hey, George, put another paid of alum in No. 1—the stock is foaming over the slice and is headed for Milwaukee?" Or, when the pulp isn't quite right and the paper does not come up to test, will increase the alum furnish so that the customer in listening to the rattle might forget to question the strength or the tear?

I have very little to offer on the substitution of alum. I told the secretary so when he urged me to get into trouble. But he vowed he did not have enough stuff to fill up his program and since the members had not heard me say anything for some years it was up to me to make an attempt. Once an editor, always a man thirsting for copy and stuff, ready to bludgeon someone to get it!

Some eight years ago we found that the mills were using too much alum in news and since they had some expense for alum furnish in that the paper was dyed with acid colors, we got them to use Sulphuric Acid to set the color. We found that 2 to 3 lbs. of Sulphuric Acid per ton of paper was all that was necessary for

that purpose. When the proportion of Balsam to the mechanical wood pulp became excessive a little alum was found advisable to prevent the sheet sticking to the press. When we started to use basic colors for dyeing newsprint we stopped furnishing the acid and managed to get along for some time without alum or acid.

At that time we tried Sulphuric Acid for setting rosin in a sized paper in one of our mills. We began with the amount theoretically necessary to break up the Sodium Resinate and increased it by various steps until we had enough Sulphuric Acid to make its cost equal to the cost of the alum which would have been needed to give the required sizing. The paper was poorly sized in each attempt. Some time later we tried the use of Ferrous Sulphate or Cupricas in a laboratory experiment. We found that it would set rosin size, but that it would take 3 times the amount required for alum. Since that would make the sizing cost greater, with injury to the color and strength of the paper we made no further attempt in its use. We did not try nitre cake nor can we see why that material would be anything more suitable than sulphuric acid, or a combination of sulphuric acid and sodium sulphate.

The members have no doubt seen and read the numerous articles which have appeared from time to time in the various paper trade journals on substitutes for rosin size such as silicate of soda with starch or starch derivatives.

These substitutes call for the addition of more or less alum and it is possible that alum substitutes may work more advantageously for sizing than for rosin sizing. I shall not discuss these sizing materials as there are members present who have had practical experience with them and are in a better position to discuss their values. I would say, however, that we recently analysed a sample of cellulose nitrate which was submitted to us as a sizing material for paper. This product as well as other cellulose derivatives may be found advantageous for tub sizing expensive paper specialties. Alum is not needed in their use.

I do not like the words substitute or substitution. If a material or a process is replaced as a result of discovery that some other material or some other process will make a better article or make the same article at a lower cost, it is called an improvement. With substitute arises a fear that a regular has broken a leg and the game is going to smash or that a stringency in the market has arisen and that some poor devil in the paper mill is going to have the stickers of a time!

There is a certain nation in Europe, that a few years ago bit off something more than could devour. That nation had long been familiar with substitute and the act of substitution so that when it began its stunt it had already a substitute for government, humanity, honor and treaty. As a result of that act it began to be very expert in substitution so that it had a substitute for food, clothing, health, industry, and from all accounts it found all these substitutes very little to its taste. The persons who first to that race gave substitute a name, must have been a very

\* Read at the fall meeting of the Technical Association of the Pulp and Paper Industry, Saratoga Springs, N. Y., Sept. 1, 1920.

keen observer for he called it "Ersatz". When you analyze that word you learn that "er" is out or forth and from all accounts it found these substitutes that the whole word is out of sediment or forth from yeast, or in other words, froth, foam, bubbles, gas. Something that is evanescent, chimerical and disappointing.

If the shortage in alum is due to lack of railroad facilities and will continue for that cause, it is idle to speculate on the use of substitutes for the same trouble would prevent our getting freely such substitutes. Furthermore, the mills would be under greater difficulties with wood pulp and fuel which require much greater tonnage for their transportation. With a shortage of freight cars, or poor railroad transportation, the danger of the mills shutting down for lack of wood, pulp and fuel rather than lack of alum is greater even than the relative consumption of those materials by the mills.

One remedy is to conserve our supply of alum and be thrifty in its use. Unsized papers do not require alum. As you know the theoretical amount of alum necessary to set rosin size is 1.3 of a pound per pound of size and that anywhere from three to six and more times that amount is used. As already mentioned there are a large number of paper makers who believe that if a certain amount of alum is of value that a greater amount will give increased service. Many of them are familiar with the use of a close relation of alum—magnesium sulphate—and have learned by personal experience that a small amount taken occasionally is quite beneficial and that larger amounts taken continuously are very mischievous. The same fact applies to aluminum sulphate when used in proper and required amounts it is of value but is damaging when used excessively.

If the alum shortage is due to lack of interest on the part of chemical manufacturers to produce enough to supply the demand of our industry, our remedy is to make our own alum from sulphuric acid and clay. The various steps in the process are simple and do not require equipment other than what the chemical wood pulp manufacturer is familiar with. For direct use in the same mill, separation of the alum solution from the clay residue with subsequent evaporation of the alum solution would not be necessary but could be used direct with the clay residue acting as a filler.

In conclusion I would say that some three thousand years ago a man had a substitute lunch with some substitute 2.75. When he woke up he saw things with a jaundiced eye and said "Vanity of vanities, all is vanity." With him we might say "Vanity is speech on alum substitutes at a time of transportation failure. What availed the paper maker to furnish the heater from sunset to sunset with nitre cake when his wood is fed up in Canada? Or what profit is there to him who assigns to furnish sulphuric acid with his size when a scrap both along the yards of the B. & M.? Nor is there production to him that useth copperas in his beds when his dryers are waxing cold.

Mr. L. B. Springsteen, who for a number of years has been Superintendent of Printing of the Strathmore Paper Company, will now have charge of the printing production of "Eagle A" advertising department for the American Writing Paper Co.

The fellow who isn't fired with enthusiasm is apt to be fired—B. C. Forbes.

## "HOUSE ORGANISTS" TO HAVE IDEA-EXCHANGE.

If you write letters, if you use circulars, if you publish a house organ, if you advertise anything, anywhere, at any time, through the medium of direct-by-mail publicity; then you are bound to get real dollars and cents results by attending the Direct Advertising and House Organ Convention at Detroit (Board of Commerce), October 27th, 28th and 29th. Many paper mills have mill papers or bulletins, and many who don't sell paper to companies who do.

It was after the 1919 Direct Mail Convention held at Cleveland that the advertising manager of a great mid-western manufacturing company said, "Frankly and honestly, I believe it was the best convention I have ever been privileged to attend. Personally, I received more *real* benefit from the discussions brought out, at the Cleveland meeting, than I have ever received at a similar event."

The committee in charge of the convention are emphasizing the fact that it is to be a wide-open meeting in every respect, and not strictly a "members only" gathering. A long list of well-known advertising men are to speak on subjects in which they are specialists.

There are a number of special features of unusual interest on the program of the Detroit meeting. An event, which has worked out well in the past, is to be a Swap-fest. The entire afternoon of Thursday will be given over to this unique feature and two prizes will be awarded by President Candee, one to the *user* and the other to the *producer*, who, in the judgment of the three judges to be appointed, offers the best and most useful idea as to improving direct advertising, house organs, or business letters, taken from the speaker's own past experience.

The judges will give preference to the man who gives his idea in the fewest possible number of words. The motto of this particular meeting will be the old familiar phrase: "You have a dollar. I have a dollar. We swap. Both have a dollar. *But* you have an idea. I have an idea. We swap. Now both have *two* ideas." Previous Swap-fests have brought out more worth-while ideas in ten minutes than the average man hears in as many weeks.

There will be a special meeting of house organ editors at which Chairman Ramsay, editor of "Effective House Organs," will preside and at which helpful suggestions will be advanced.

It is possible to announce at this time that Harry C. Spillman, Educational Director of the Remington Typewriter Company, will be the speaker of the evening. Mr. Spillman's lectures in the past have been just is to be "Personality as a Basic Factor in Selling." Mr. Spillman's lectures in the past have been unusually interesting and absorbing, and he is known personally to many of America's advertising men.

## THE FATAL PUN.

The electrician had arrived home at 1 a.m., and was preparing to undress when his wife glared at him and said:

"Watts the matter? Wire you insulate?"

But the shock was too great. The electrician dropped dead. Cincinnati Enquirer.

Saving is Having—B. C. Forbes.

# An Automatic Continuous Mixing System for Paper Stock\*

By EDWARD J. TRIMBEY.

In the manufacture of newsprint paper, beating, or drawing out the fibers is unnecessary. While beaters are still used in many mills making newsprint they are used merely for mixing the ingredients or for breaking up the sheets of pulp where either the groundwood or the sulphite, or both are used in lap form.

In the larger and more modern mills both groundwood and sulphite are furnished in the form of soft stock, and present practice is to use mixing tanks in place of beaters. The process of supplying two or more paper machines making the same grade of paper, from a common source of relatively large capacity, which is in turn supplied from mixing tanks, is the invention of Mr. Warren Curtis, jr., and while it seems to be not generally known, this process is fully covered by patents. It is applied in several ways; in most cases an agitator is used for mixing the stock and other ingredients, though in some installations the stock is mixed by means of a pump which draws the stock from the bottom of the tank and delivers it tangentially into the top of the tank, thereby agitating and mixing the mass. It is pumped around until it is sufficiently mixed, when the valves are changed and the mixture is sent over to the jordan chests by the same pump.

As compared with a beater system, the mixing tank system had marked advantages, as its use resulted in savings in first cost, floor space, power and labor, though an equipment of mixing tanks for a 200-ton mill would require a floor space of about 500 square feet on two floors, 100 H. P., or more for the pumps and agitators, and one to two men per ton.

During the past year, there has been in operation in one of the largest newsprint mills in the world, an automatic continuous mixing system which is continuous as against intermittent in action, is automatic in its operation and control, and which with regard to further savings in floor space, power, labor and upkeep is as great an advance over the intermittent mixing tank system now in use as they were over the older beater systems. In addition, it has advantages as regards uniformity of furnish and accuracy of control of proportions which cannot be duplicated with any of the other systems now in use, not excepting the expensive method of taking off all pulp in laps and weighing the amounts of groundwood and sulphite furnished to each beater.

Groundwood and sulphite are furnished continuously, either by gravity or by pumping, to their respective compartments of a double vat; each compartment is provided with an overflow dam and a float valve of special design, for maintaining a constant level in the compartment regardless of the rate of flow of stock. Mounted in one end of this double vat is an outlet spout communicating with both the groundwood and the sulphite compartments, and so arranged with a separating partition and an adjustable top that the cross sectional areas for the outflow of groundwood and of sulphite will give the desired proportions of each, and at the same time the total flow can

be varied to meet the changing requirements of the paper machines. This separating partition can be locked in any position without interfering with the movements of the adjustable top, and thus maintain a constant percentage of sulphite; it can readily be adjusted to give any other percentage if desired, and the adjustable top is automatically raised and lowered to deliver sufficient total stock to maintain a constant level in the machine chests.

In addition to being adjustable for both total volume of flow and relative proportions of groundwood and sulphite, this outlet spout has valuable regulating features which automatically compensate for minor variations in the consistency of each. When soft stock flows through a pipe or spout under the influence of a given head it will attain a certain velocity which is much less than that of water under similar conditions, as it meets with considerable frictional resistance; if the consistency increases, the frictional resistance will also increase and since the "head" remains constant this necessarily results in a decrease in velocity. It can readily be seen that by proper design the decrease in velocity can be made to counterbalance the increase in consistency so that within a given consistency range there will be a constant rate of discharge of dry stock per unit of time. It is expected that the stock coming to the vats of the continuous mixing system will be controlled by consistency regulators but this automatic compensating feature is of value as a second control to smooth off temporary variations and to act in cases of emergency.

The other ingredients, clay, color and alum are supplied in solution or in liquid form to receiving vats in which a definite head is maintained by means of overflow dams. In the bottom of each vat is an orifice in a brass plate. This orifice being of a fixed area and under a constant head discharges a constant quantity into a second vat beneath, which is provided with a double overflow weir having a separator between the two weirs, an arrangement similar to that used in some stuff boxes. The discharge from one weir goes into the mixture of groundwood and sulphite, and that from the other weir joins the overflow from the upper vat and is returned to its supply tank. The separator between the two weirs is mechanically connected to the mechanism for raising and lowering the adjustable top of the stock spouts for groundwood and sulphite in such a way that when the pulp discharge ports are closed the weir discharging into the pulp mixture is also closed and the liquid all goes out at the overflow. As the stock ports open the separator is automatically shifted to keep the length of the weir always proportional to the area of the stock ports. In this way clay, color and alum are always added in the right proportions. Suitable means are provided for readily increasing or decreasing the percentage of any one of these ingredients as desired without changing the others.

A double ratchet wheel of improved design operates the gears which are employed for raising and lowering the adjustable top of the stock spouts, with suitable means for limiting the travel. The pawl operating this ratchet wheel is engaged by means of a solenoid

\*Read at this fall meeting of the Technical Association of the Pulp and Paper Industry, at Saratoga Spring, N. Y., Sept. 1, 1920.

emerged through contacts connected to a float in the chest supplying the machines. If sufficient stock is not being furnished by the mixing system the chest level in the machine chest will drop, contact will be broken and the pawl will engage with the ratchet to raise the adjustable top and thus increase the areas of the outlet ports for groundwood and sulphite, increasing the flow. If the level in the machine chest is too high the reverse action takes place. In this way we have an automatic stock-tender. Increasing or decreasing the flow of groundwood and sulphite and at the same time increasing or decreasing the amount of clay, color and alum as one master controller operates all the control gates. All the ingredients are thoroughly and intimately mixed by the interference of stream lines as they flow together continuously.

This gives a system which operates without a regular attendant, exact proportions of clay, color and alum are added regardless of the total flow of stock, and exact proportions of groundwood and sulphite are maintained regardless of either the rate of flow or of minor variations in consistency. The first consideration is something of which one cannot be certain when depending on a helper to draw groundwood and sulphite to a "mark" on the side of the mixing tank, and the second cannot be secured with any of the present mixing systems.

To illustrate the reduction in floor space required with this continuous mixing system as compared with either beaters or mixing tanks, the overall dimensions of an equipment for a capacity of 300 tons of paper per day will be nine feet by six feet by five feet high, with a mixing compartment extending thirty inches beneath the floor. As to power, the only requirement is a one H.P. motor to operate the controls; and as to labor, no regular attendant is required; there is a considerable saving in maintenance cost, and smaller pumps can be used for supplying groundwood and sulphite. Since the stock flow is continuous the amount to be handled per unit of time is not nearly as great as with an intermittent system where the beaters or mixing tanks must be filled quickly.

With this continuous mixing system the uncertain manual control of stock proportions is replaced by an accurate mechanical means, thus insuring a more uniform furnish, better quality at less cost, and better operating conditions on the paper machines.

This continuous mixing system is not limited to newspaper mills alone, but can be adapted to board and news ground papers where the stock is first pulped and then washed and thickened and the beaters are not used, or to provide a means of adding filler, color, and alum. In any mill where the furnish is to be reduced to the form of soft stock, or where it can be reduced to soft stock by means of a pulper or shred, the great advantage is to add definite amounts of chemicals to the stock as this provides a very compact, accurate method of measuring and dosing. In many mills the mixture can be spread by gravity directly from the top of the machine to the Jordans and thence to the machine chest, or it can be raised by the Jordan drive and then distributed further, saving a power and space point in the machine by fitting the former for top discharge in which the full storage capacity is retained.

What we need is a law that will make an unjust law, if it can be added, a public utility, necessary. — *George B. S. C. P. Board.*

## DRYDEN TO MAKE GROUNDWOOD AND BOARD.

The Dryden Pulp and Paper Company, of Dryden, Ont., a large producer of kraft pulp and paper, has been purchased by Montreal interests from the English owners. A new company has been formed to take over the old property and complete the mills, to give them the output for which they were intended.

The amount of securities involved in the new company is approximately \$5,000,000. The English interests will retain their holdings of the \$1,500,000, six per cent. bonds now outstanding.

The Dryden Company holds 1,157 square miles of timber limits adjacent to Lake Wabigoon and Eagle Lake, in the Kenora district of Ontario, between Winnipeg and Port Arthur containing a large stand of accessible pulpwood.

The company's history dates back to before the war, when it was originally formed as a lumber and power concern. It went into liquidation in 1913, at the time when the lumber business went into depression. Additional capital was secured and the company's sulphate mill which was under construction previous to liquidation was completed. Under the reorganization of the company's capitalization was scaled down to low figure. The pulp and paper plant was gradually developed out of earnings, and additional powers have been partially developed, and the mills, which are laid out for a much larger capacity, have been brought up to the present production of 15 tons of sulphate pulp, 18 tons of building paper and 15 tons of kraft paper per day.

The company's timber limits are adjacent to two lakes of approximately 100 square miles each, which enables it to secure its pulpwood, it is said, at a very low cost per cord delivered at the mill.

The Dryden output of sulphate pulp goes largely to the paper mills in the Fox River Valley region on Wisconsin and in Minnesota, which in past years have been running very short of pulp supply. The building paper goes into the chief Western Canadian market, which is the chief market in this country for that product. Kraft paper is sold in Western Canada and throughout the world under the Dryden trade mark. The new company will add 40 tons of ground wood and 50 tons of board to the present output.

Among the directors of the reorganized Dryden enterprise will be included, it is understood: W. A. Black, vice-president and managing director of Ogilvie Flour Mills and a member of the Abitibi Pulp and Paper Board; J. B. Beveridge, who has for some time been associated in the chief executive capacity of the company; J. N. Greenshields, K.C.; J. H. A. Aeer, director of the Laurentide Power Company; Senator Lorne C. Webster and Dan McLachlin, President McLachlin Bros. Limited, of Arnprior, Ontario.

## THE FORT WILLIAM PAPER CO

With a capitalization of fifteen million dollars and headquarters at Toronto, the above company was incorporated by the Department of State at Ottawa, recently. The provisional directors are all Toronto people. The company proposes to engage in every kind of manufacture of paper and pulp.

Find the weakest part of your body before your body begins to wobble. If you know the weakness a few years before the breaking point you may be able to prevent a serious outcome.



# What TAPPI Did at Saratoga

It was mentioned in our last issue that business in connection with the Text Book prevented the editor from enjoying all the events of the fall meeting of the Technical Association of the Pulp and Paper Industry at Saratoga Springs and vicinity, Sept. 1-3. For the following account we are indebted to the representative of the Paper Trade Journal, who saw "the whole show":

This convention of the Technical Association was one of the most largely attended meetings in the history of the organization and in the minds of most members unquestionably the most enjoyable. About 350 members and guests were present. The various committees performed their duties in an unusually efficient manner leaving not a moment when those present were not requested to indulge in some interesting or pleasurable pursuit.

## President Hatch Opens Convention.

President Raymond S. Hatch called the convention to order in the Casino on Thursday morning. President Hatch introduced Edward B. Ashton, president of the Saratoga Chamber of Commerce who in his address of welcome said:

"Mr. President and members of the Technical Association of the Pulp and Paper Industry: The Chamber of Commerce and the citizens of Saratoga Springs are delighted to have you here for your 1920 meeting, and we extend to you every facility at our command to make your gathering a complete success.

"Surrounded, as we are, by the great mills of the International Paper Company, Finch, Pruyn & Co., The Union Bag and Paper Corporation, the West Virginia Pulp and Paper Company, and numerous smaller mills, such as the Iroquois Pulp and Paper Company with which I am associated, this is a fitting place for your association to convene. This, too, is the Adirondack spruce region and at Palmer Falls, near here, ground wood pulp was originated. May you have a profitable and enjoyable stay here and come and meet here with us again."

## George S. Witham, Sr., Responds.

George S. Witham, Sr., manager of mills of the Union Bag and Paper Corporation, responded in part as follows:

"In responding on behalf of the Technical Association of the Pulp and Paper Industry to the gracious address of welcome rendered us by the City of Saratoga Springs, the speaker's task is lightened very considerably by a deep feeling of the appropriateness of this particular section of our country for a meeting of this particular association.

"The Technical association has met in years past in many different sections of the country, and all of these meetings have been occasions replete with pleasure and profit to all of those so fortunate as to be able to attend; however, both as a paper-maker and as a resident of the upper Hudson valley, I have no hesitation in stating that no section of the United States could be selected for this meeting which would be more intimately connected with the development and progress of the paper industry than that in which the various sessions of the present meeting will take place.

"Not far from here, in the foothills of the Adirondacks, was made the first ground wood pulp ever produced in America, a development so significant in the history of the paper industry that it is needless for me to comment on its importance. For many decades the Adirondacks furnished one of the principal sources of supply of wood for paper making in the United States; and, although necessarily diminished, that supply is not yet by any means exhausted, and should, with proper methods of reforestation, remain a permanent asset to the nation. The Adirondack region cannot well be put to profitable use for agricultural or other purposes, and it is to be hoped that such measures will be taken by National and State governments that will remain throughout the centuries a permanent, scientifically maintained forest, yielding successive crops of pulp wood, as well as timber for other purposes, and at the same time affording a forest region for sporting and recreative purposes, of which the densely populated cities of the northeastern United States are permanently in need.

"That such an idea is no idle dream is abundantly proved by the fact that in Europe large amounts of pulpwood are being cut annually from forests which have been in use for a period of time which makes the entire history of the State of New York seem but a brief chapter.

"There has been a great deal of discussion during the last few months concerning the tendency of the Canadian Government to refuse the use of their reserves of pulpwood to American paper manufacturers, and to gradually withdraw all possibility of our permanently depending on that source of raw material. The adjustment and settlement of this problem is a matter that we may well leave to the politicians of the two nations involved. There is no reason to doubt that a reasonable and mutually satisfactory settlement can be arrived at, for during a period of over a hundred years the United States and Canada have successfully arbitrated numerous more serious disputes—disputes concerning fisheries, boundaries, tariffs and many other matters, with the result that the boundary line between the two countries stands today—a most hopeful fact—the longest international boundary in the world, unmarked by a single fortification in actual use, and, in times of peace, unguarded by a single soldier.

"However, harking back to the forests of the Adirondacks, the lesson for us in the present situation is that if the matter of forest conservation had been taken in hand years ago, we would not have been ever in the humiliating position of having to negotiate with any other nation for pulpwood essential to our paper industry. With the tremendous resources of forest wealth originally in the possession of the United States we have nothing to blame but our own short-sightedness as a nation for our present predicament. However, it is no use to cry over spilt milk. We have made our mistakes and I hope—have learned the resultant lesson. The thing to do is to think seriously about this matter of conservation and to provide for the future.

"All of the development of the paper industry, is the fruit of the work of technical men, such as the

members of this association, on whose behalf I am now speaking. I have attempted to explain to those of our friends not familiar with the association and its work, just what and why it is. In thanking Mr. Ashton and Citizens of Saratoga Springs for their cordial and graciously expressed welcome, delivered by the president of the Chamber of Commerce, I feel that I will not be saying too much, if I state that the Technical Association of the Pulp and Paper Industry has, by its past work and its future prospects, fitted itself to be spoken of as a body which the City of Saratoga Springs honors itself in honoring."

#### Report of the Secretary-Treasurer

The following is the report in part of the secretary-treasurer and executive committee presented by Thomas J. Keenan, secretary-treasurer:

Mr. Chairman, before proceeding with the report of the Executive Committee, I would like the privilege of expressing my great appreciation of the address made by George S. Witham. George S. Witham is unique in the industry. He is a man who has risen up through the ranks. He has been through every department of the paper mill, and knows whereof he speaks much better than I or my associates perhaps who are younger than I am. He has just published a book which is one of the most valuable contributions to the literature of paper making which has appeared within several decades—this textbook of the pulp and paper industry. The remarkable thing about his book is that it deals with the mechanics of the subject in such an informing manner. He speaks as one in authority, who has handled the machines he describes; and I am sure that every superintendent, every man who has to do with the manufacture of pulp and paper, will welcome this book by Mr. Witham, and I am sure that it is a high privilege for the Technical Association of the Pulp and Paper Industry to have Mr. Witham welcome us in reply to the speech of the president of the Chamber of Commerce, in such an informing manner.

I thank the gentlemen for allowing me to relieve my system of those sentiments! But if you will read Mr. Witham's book, you will appreciate my point of view.

#### Report of the Executive Committee

For the Executive Committee, Chairman Raymond S. Hatch reported a steady increase of membership since the annual meeting held in New York four months ago, the total membership now exceeding 600. Two members had been lost by death, George C. Sherman and Henry Earl Surface. It was recommended that a special committee be appointed to draw up suitable memorial resolutions.

It was stated in the report that after long and careful deliberation the Executive Committee had decided to abandon the idea of publishing a trade journal through the TAPPI Publishing Corporation. In place of this the association is to undertake the publication at least semi-annually of a volume of Proceedings, Transactions, Abstracts of Literature and original articles. The Committee said that a beginning has been made by the publication of a revised edition of the Paper Testing Committee's report. The work bears the title "Paper Testing Methods," and constitutes a practical treatise on approved modern methods for testing papers by microscopical, chemical and physical means. The work is illustrated from photographs and one of the chapters deals with the

fibres used or proposed for use in papermaking. Members of the association will be supplied with the volume free of charge and copies will be on sale at \$1 each.

The committee recommended an increase in the annual dues of members and associate members to \$25, the subscription for juniors being allowed to remain at \$5 as at present. As this necessitated an amendment to the Constitution and By-Laws unanimous consent was asked and granted for a suspension of the rules. The amendment was adopted by unanimous vote.

In conclusion the Executive Committee expressed hearty appreciation and thanks in behalf of the association to the paper manufacturers of the Hudson River and associated industries for the splendid entertainment and educational features which had been provided for the fall meeting.

The Executive Committee applauded "the admirable spirit of co-operation displayed by the various paper trade journals in advertising the meeting," and assured these journals of its appreciation and thanks for services of the kind mentioned.

#### Resolution Adopted

At a later sitting of the association a resolution was adopted expressive of the great loss sustained by the association in the death of Henry Earl Surface, who had served long and ably as Chairman of the Committee on Bibliography. The late Mr. Surface was graduated as Bachelor of Science and Chemical Engineer from the Ohio State University. During the years 1907 to 1914 he conducted numerous pulp and paper investigations for the United States Department of Agriculture. From 1914 to 1915 he was consulting engineer for the Government of Tasmania. He was also for a time lecturer in Forest Products at the University of Wisconsin. The Committee on Resolutions submitted the following minutes through George H. Harvey.

#### Henry E. Surface.

It has pleased the Divine Ruler to remove from us Henry E. Surface, with whom it has been a pleasure for members of the Technical Association to work for many years, and we desire to record our great loss.

Henry E. Surface's wide knowledge of the pulp and paper industry, his untiring energy and capacity for painstaking investigation, his absolute sincerity and devotion to his task, his integrity of purpose and sterling character will always endure to his memory and be a source of inspiration to his associates. We, the members of the Technical Association of the Pulp and Paper Industry, express our sorrow for the loss of his advice, assistance and friendship and convey to his family our deep sympathy in their affliction.

#### Report of Bibliography Committee.

In the absence of Clarence J. West, chairman, the following report was read by Secretary Keenan:

"The work of the Committee on Bibliography has suffered a great loss since the last meeting in the accidental death of Henry E. Surface, whose work is well known to all the members of the Technical Association.

"The work of the committee has been held up during the interval since the last meeting of the Technical Association because of the plans which were being made for the new technical journal. It was Mr.

Surface's idea that the bibliographic contributions should be held until the new journal was under way. Because of this, there are in the hands of the committee at the present time ten bibliographic contributions: Dumeroy, Bibliography of Paper Making, translated by Dard Hunter; A Reading List on the Sizing of Paper, with Particular Reference to the Chemistry of the Process; A List of the Research Writings of the Staff of the Royal Institute for Testing Materials; A Bibliography on the History of Paper Making in the United States, prepared by Miss Maud V. Dickenson; A List of the Research Writings of the Bureau of Standards; A Reading List on Filter Paper; a rather complete bibliography of Paper Making Materials other than Wood; and three bibliographic manuscripts compiled by the Library of Congress on Special Aspects of Paper.

"The work of the committee will be continued along the lines which were laid down by Mr. Surface. His long continued activity in this committee, and his very great interest in the work lead us to believe that we can do no better for the present than to continue along these lines.

"The committee is open to suggestions from all members of the Technical Association, and asks the wholehearted support of every member in this work, which we believe to be of vital importance."

#### **Report of Committee on Heat, Light and Power.**

The following report from the Committee on Heat, Light and Power was read by Howard S. Taylor, chairman.

The report of the Heat, Light and Power Committee at this meeting can touch only on the future, due to the fact that since the request of our president that I assume the chairmanship, a new committee has not been thoroughly organized. We hope, however, at the next meeting of this association, to be in a position to present for your attention a paper on the many subjects of general interest, and it may be that within the near future you will be requested to indicate your preference as to subject, as by such procedure on your part a subject can be chosen that will be of interest to perhaps the greatest number, and I therefore ask that should you members receive such a request in letter form that you assist your committee in as far as possible with an early answer.

With the broad scope as indicated by its title, the Heat, Light and Power Committee has possibilities for action that if utilized should bring up for discussion on subjects that are constantly in the minds of both the Technical and Operating Departments, especially at this time of ever increasing demand for production and corresponding demand for increased speed throughout the mills such as electrification of machinery; heating and ventilating of buildings, especially machine rooms; steam turbines against reciprocating engines, etc. These are all subjects that have a bearing on increased production and efficiency, and therefore must be of special interest to the industry at large.

It is expected that very shortly the names of those who are to make up this committee will be announced, and I sincerely hope that our efforts will be entitled to the hearty co-operation of the association as a whole, as only by such co-operation can any real benefit be derived from discussions of papers that we may present for your attention.

*(Report of Committees will be continued.)*

#### **Wednesday Afternoon Session.**

During the afternoon special papers were read and the convention group picture was taken.

At 4 o'clock the ladies started on a sight-seeing trip which covered the Springs, Reforestation Nursery, Yaddo, etc.

#### **An Enjoyable Banquet**

The TAPPI banquet, held on Wednesday evening in the large main dining room of the Grand Union Hotel was an unusually enjoyable affair. Much of the credit for this is due to Frank T. E. Sisson, manager of the Raquette River Paper Company of Potsdam, N.Y., who was in charge of the banquet entertainment and who saw that things were kept lively from beginning to end. During the courses of the savory dinner high class cabaret artists and chorus singing added greatly to the enjoyment of the occasion and just previous to the after dinner speaking George Carruthers, president of the Interlake Tissue Mills Limited, of Toronto, Ont., told one of his best Scotch dialect stories and J. N. Stephenson, editor of the Pulp and Paper Magazine of Canada, also related one of the good stories with which he is always so abundantly supplied.

#### **C. R. McMillen Toastmaster**

The banquet was one of the numerous hospitalities extended by the Hudson Valley Paper Manufacturers. At the conclusion of the dinner C. R. McMillen, vice-president of the Union Bag and Paper Corporation, as toastmaster took charge of the proceedings. Mr. McMillen stated that he was not in practice, but he did a good job nevertheless. He stated that we were passing from an old to a new era and asserted that paper was assuming increasing importance in the new order of things. He paid a high compliment to the positions that were being occupied by members of the Technical Association of the Paper Industry in the transition period.

#### **L. H. Shipman Speaks**

The toastmaster first introduced L. H. Shipman, of the Spanish River Pulp and Paper Mills Limited and chairman of the Technical Section of the Canadian Pulp and Paper Association. Mr. Shipman said he brought a word of good cheer from the Canadian Section and extended a hearty invitation to have the American members attend the next meeting of the Canadian Section.

#### **Address by Geo. W. Sisson, Jr.**

The next speaker was George W. Sisson, Jr., president of the American Pulp and Paper Association, who spoke well on the obligation of the United States to function internationally in an economic rather than a political capacity.

Mr. Allen Curtis, manager of production of the International Paper Co., and Dr. Hugh P. Baker, secretary of the American Paper and Pulp Association also made brief and interesting remarks.

#### **Mill Visitations**

Thursday and Friday were devoted to mill visitations and Thursday evening was devoted to a delightful sail on Lake George.

At 9 o'clock Thursday morning two automobile parties were formed, one proceeding to the Hudson River Mill of the International Paper Company at Corinth and the other to the mill of Finch, Prinn and Company at Glens Falls. At both of these mills the members were extended every courtesy and were shown

low ground wood, sulphite, newsprint, hangings, etc., are made under thoroughly modern conditions.

At noon both parties met at Glens Falls and were taken to luncheon at the Paris House, which occasion proved one of the most pleasurable ones of the convention. The luncheon was most appetizing and the atmosphere in which it was served made it doubly enjoyable.

At the conclusion of the luncheon the members proceeded by automobile to inspect the plants of the Sandy Hill Iron and Brass Works, the bag factory and the Fenimore Sulphite and Paper Mill of the Union Bag and Paper Corporation.

At the latter plant special interest was manifested in observing the "Witham Sr. System" of Temperature Control and the "Witham Jr. Heat Reclaiming System" installed on two paper drying machines—also P. & W. Controllers applied to each of these dryers for automatically discharging the entrapped air as well as the condensation from drip-leaders, one of these controllers having replaced 8 traps.

The "Witham Sr. System" was designed and invented by G. S. Witham, Sr., General Manager, Union Bag and Paper Corporation—the "Witham Jr. System" by G. S. Witham, Jr., General Superintendent Union Bag and Paper Corporation—and the P. & W. Controller by E. W. Patton, Superintendent, Robeson Process Company, Au Sable Forks, N.Y., and G. S. Witham, Jr.

#### Sail on Lake George.

After the visit to the plants of the Union Bag and Paper Corporation the party proceeded to Lake George. An evening excursion was taken on the lake. Luncheon was served on the steamer and music was furnished throughout the long enjoyable sail by the band of the Union Bag and Paper Corporation.

At 9 o'clock on Thursday morning chartered trolley cars were taken for Schenectady where, in charge of W. W. Crookhite, the mammoth plant of the General Electric Company was visited. After about two hours spent here the party assembled at the dining room of the works where luncheon was had and a brief address by the manager of the works was listened to. The afternoon was spent in visiting the paper machine E. I. mills at Albany of F. C. Huyek & Sons and the Albany E. I. Company.

#### Committee of Arrangements.

The members of the committee of arrangements to whom the thanks of the association are so greatly due are as follows:

Charles F. Rhodes, chairman, International Paper Company, Glens Falls, N.Y.

George S. Witham, Jr., in charge of transportation and visiting, Union Bag and Paper Corporation, Hudson Falls, N.Y.

C. A. Woodcock, treasurer of the Committee, Finch, Pease & Company, Glens Falls, N.Y.

Arthur J. Kerckhoff, in charge of banquet, Sandy Hill Iron and Brass Works, Hudson Falls, N.Y.

W. W. Crookhite, Reception and in Charge of General Electric Company visitation, General Electric Company, Schenectady, N.Y.

Frank T. E. Sisson, in charge of banquet entertainment, Robert River Paper Company, Potsdam, N.Y.

Stanley M. Hyde, in charge of hotel reservations and dining, S. C. Stone, American Pulp, Stone Company, Saratoga Springs, N.Y.

## LOCATING DESIRABLE TIMBER LIMITS IN CANADA.

Concomitant with the increased cost of paper and indeed, the imminence of a newsprint famine, the eyes of the civilized world are being directed towards Canada's vast forests which contain such untold wealth in the shape of standing timber. Buyers from foreign countries whose object it is to purchase the precious timber limits continue to invade Canada, but theirs is no easy task, for while at first sight, our endless miles of virgin forests should present many opportunities for an attractive purchase to any one with sufficient capital, yet the choice limits have long since been investigated and ear-marked by those enterprising men who had the foresight to anticipate the present situation. Prospective buyers should therefore endeavour to get in touch with men who possess valuable information relative to Canadian timber limits before they rush in, relying simply on a well worded report, and purchase a limit whose value turns out to be negligible.

The Canadian Woodlands and Pulpwood Agency, with offices in Montreal, is well equipped to render valuable assistance to a prospective buyer of timber limits. Upon investigation, the writer found that this concern possessed a complete system of ingeniously arranged, multi-colored maps with the timber areas marked in different colors. Each area bears a number as does also each map, so that it will correspond with the number on the list compiled by the company. This list contains the names of practically every owner of a timber limit in the Dominion. By taking advantage of the company's system of maps, the buyer can, at a moment's notice, be shown any particular section of the country with the boundaries of the limit and the owners thereof. He has before him the drivable rivers and the ports and railway sidings to which his cut timber can be transported. The company's cruisers have, of course, made complete reports of the various limits and these, together with topographical maps and all other necessary details, are kept on file.

As mentioned above, American and foreign buyers with the object of buying up all available timber limits, continue to invade Canada in such numbers that it puts one in mind of a miniature gold rush. British capitalists should not be caught napping. The apathy of British investors in this respect, as compared to those from other countries, leads one to believe that they are not sufficiently well informed of the extent and accessibility of the Dominion's timber areas. Now is the time, before it is too late, for our cousins across the seas to realize that in Canada's majestic forests, lies one of the most valuable assets that the British Empire can boast of.

F. D. G.

The Cost Association of the Paper Industry will meet in Convention at the Waldorf-Astoria Hotel, New York, Sept. 27 and 28. Everybody welcome.

The pulp mills of the Bathurst Lumber Co., were obliged to shut down for a few days recently because of lack of coal.

Shade trees may be destroyed by leaky gas mains, which poison the roots, making it impossible for the tree to secure nourishment from the ground. Gas killed trees are often thought to have been killed by insects, and weakened trees are often completely killed by borers or by fungi.

# The Kipawa Plant of the Riordon Company

By J. N. STEPHENSON.

Without casting any reflection on several excellent pulp mills which he has had the privilege of visiting, the writer feels safe in saying that the Kipawa plant of the Riordon Company, Ltd., is the best he has seen. This huge plant is the crowning feature in the steady growth of the business begun in 1857 by John Riordon and the result of his courageous and far-sighted policy which has been ably followed and supported by Charles Riordon, the present head, and the directors of the Riordon Company.

This modern sulphite pulp mill of the Riordon Co. makes only the highest grade of bleached sulphite pulp and consequently has several features of equipment and operation apparently not considered essential in other plants. The whole plant is a distinct credit to the engineering department of the Riordon Company, Limited. The success of the undertaking supports the contention of a past chairman of the Technical Section, that when it comes to designing a mill and installing equipment, the financiers should not interfere with the engineers.

This mill of the Riordon Co. is surprisingly easy of access. One leaves Montreal at 8.15 p.m., arrives at Mattawa for breakfast and takes the branch train for Temiskaming, which is reached at 9.30 standard time. Here, at the foot of the Lake Temiskaming, where Gordon Creek tumbles the waters of Kipawa Lake in to the Ottawa River, is the location which C. B. Thorne, technical director of the Riordon Co. selected in 1913 as the ideal spot for a mill. On this spot there stands today a modern plant making 140 tons of superior pulp, where only forest trees stood two years ago.

In telling this tale it will be easier to use the first personal pronoun.

## Plenty of Power.

Members of the Technical Section are everywhere, and there are several at Kipawa. One of them met me at the station and we drove to the power dam across the channel of Gordon Creek. From here a 4 ft. stave pipe takes water, which is first screened, to the mill and town for manufacturing and domestic uses. No fire pumps are needed, as the pressure is more than sufficient to throw a stream over any of the highest mill buildings. An 8 ft. stave pipe a mile long carries water to the fore-bay at the lake shore. Provision is made at the dam for a second pipe the same size, and plans are made for a tunnel through the rock if this should be preferable. The present provision is for 15,000 h.p., which can be increased to 30,000 from the present dam, or to more than 40,000 by water storage works. The company control the waters of Kipawa Lake, and have a dam at the old outlet through the Kipawa River, which can be closed when required.

The little settlement a mile up Gordon Creek is called Lumsden's Mills, after the man who conducted an extensive saw mill and lumber business here. The place was taken over by the Riordon Company. The sawmill is inactive at present.

From the re-enforced concrete forebay (and gate-house) one steel pipe has been constructed, and there

is provision for four more, to the power house, 205 feet below. One vertical turbine and generator unit of 3,600 h.p. capacity is now operating, and a second is partly installed. There are two exciter-generator units, one electrically driven and the other water-driven, for starting. Current is sent out at 6,600 volts to sub-stations. Main switches, cut-outs and circuit-breakers are in a separate room, enclosed in individual cells. The switchboard and master control board are located on a gallery over the generator floor, and on the gallery the attendant has comfortable quarters in a bright room furnished with desk, bed and chairs, and an adjoining bathroom. The turbines are readily accessible, as none of the equipment is underground. The water discharges directly into Lake Temiskaming, where the depth is about 30 feet. At this narrow part of the lake only on the very earliest days is the ice strong enough to obstruct a canoe.

At the company's wharf near the power house are a number of fine motor boats, in which members of



C. B. THORNE.

*Vice-President and Technical Director of the Riordon Co. and Engineer in charge of Design, Construction and Operation of the Kipawa plant of the Riordon Company.*

the staff find enjoyment. In one of these we went to the sorting rap a mile up the lake, where a station of the Upper Ottawa Improvement Co., who act to a degree resembles the work of St. Maurice Co-operative Driving Association, separates the mill logs from those belonging to the Booth, and several other mills down the Ottawa. The Kipawa logs are floated into a large pocket formed by the natural contour of the lake and held by a fine boom of 2 ft.

square B.C. fir timbers, each 40 ft. long, which are elevated in pairs and double-chained. This makes a strong boom, which is safe to walk on and which will last indefinitely. When the logs are wanted at the mill a number of them are collected inside a chain of logs called a sack and towed by the company's steamer down the lake to the foot of the jack-ladder. Here the manufacturing operations proper begin.

#### The Wood Preparing Department.

As the logs pass up the jack-ladder in 16 ft. lengths they are checked for number, diameter, and size, and according to kind of wood by the company's checker and by a representative of the Upper Ottawa Improvement Company. This gives a check on logging operations and constitutes the basis for charging wood to the plant. The logs are barked in full 16-ft. log



*Tending Floor of Boiler House. Travelling Weighing Hopper Charging No. 3 Stoker.*

lengths in the patented apparatus designed by Mr. Thorne. In being tumbled over one another by means of the powerful cams the bark is efficiently rubbed off from the water-soaked logs without wasting any of the wood or damaging the fibre on the surface.

From the barkers the logs drop upon flat cars and are hauled by the yard engines to the piling ground, where a crane and grapple stacks the full lengths in piles on either side of four lines of track, something like a quarter mile in length. This yard can be extended when necessary. The wood for the mill may be taken from storage by the cranes, placed on flat cars with self-dumping bottoms and hauled to the hot pond, or the wood may be taken directly from the barkers if desired. Besides the Company's wood, which comes down the lakes, there may be a considerable amount of wood bought from farmers which comes by car in 4-ft. lengths. This is stored in a convenient yard, or may be sent directly in to the wood preparing department for 4 ft. wood, and is barked in machines of same construction as those used for 16 ft. logs. The logs when brought to the mill are floated in through the hot pond to a jack-ladder, which carries them to a saw-deck, where a slasher saw cuts them into two pieces, and these are carried on chains to a sorting table, where any stick that is not perfectly clean is pulled to one side and thoroughly cleaned by hand. Then the clean 8 ft sticks or the 4 ft sticks from the farmers' wood pile are sent to the chippers, where

the funnel, 16 ft. long, insures a constant heavy pressure of wood against the chipper knives with the result that a very uniform size of chips is maintained. From the two chippers the chips are elevated to a breaker from which they pass to the three rotary screens. The over-size and slivers are sent to a re-chipper and returned to the screens. The sawdust and other waste drops to a cable scraper conveyor and is carried to the boiler plant. The chips meanwhile pass to a belt conveyor which carries them to the chip loft over the digesters.

Before going farther it would be well to mention the very convenient location of the mill as regards railway facilities. The mill site is the space in the Y formed by the main line of the C.P.R. to Lumsden's mills and beyond, and the branch to the townsite and the wharf and landing for steamers plying between Temiskaming and Haileybury. It will be recalled that in the early days of the Cobalt mining development this point was the end of the steel, and supplies were carried by water sixty miles up Lake Temiskaming. The main line passes up a considerable grade at this point, so that rail wood, sulphur, limestone, coal and other supplies of like nature can be brought in directly on trestles and dumped for convenient transportation to the point of consumption. This greatly facilitates both the handling of freight and the storage of supplies, and was a factor in the selection of the site.

The boiler plant at present consists of 5 B. & W. water tube boilers of 600 boiler h.p. capacity each. They are equipped with recording instruments for temperature, pressure and carbon dioxide, as well as meters for determining the distribution of steam consumption and with a weighing hopper for the coal which is stored in an overhead bunker. Economizers are being installed and three more boilers are being added this summer. This will complete half of the



*Chip Conveyor Belt, Tripper and Bins.*

boiler house and the other half will be constructed so that the boilers face each other with a common operating floor and a common bunker from which the coal will be readily weighed and fed to the mechanical stokers. Under the operating floor is an ash tunnel, which is entirely enclosed so that the ashes can be readily dumped into ash-cars without scattering dust over the machinery and from which they will be readily carried out on light tracks to the ash dump. (At present the ashes are being used for filling in a portion of the new site.) The whole boiler house is above ground, as are all the other buildings, because of the careful selection of the site, so that all operations are well lighted.

### The Acid Plant.

Like every other department of the mill, the acid plant is arranged for convenient expansion by using a temporary wood wall on one side, while the present units form a complete working installation. Sulphur is brought in directly from the storage under the trestle and, after weighing, is carried by a short elevator to a container over the burners, which will hold 24 hours' supply. From this the attendant, as occasion demands, fills the melting chamber at the end of the burner. Rotary burners are used attached to large combustion chambers. The same elevating and storage arrangements will serve when two additional burners are placed on the outside of the two now in operation. The gas is cooled in another piece of apparatus designed by C. B. Thorne and practically perfect results have been obtained.



*Part of Charging Floor, Digester House. Note Bottom of Concrete Chip Bins and Steel Filling Funnel.*

The cooled gas can be conducted into either of the two limestone towers which are built of re-enforced concrete. The connecting pipes are of smooth tile embedded in concrete. The usual system of making acid is carried on, the gas passing first into the strong acid tower and from there passing later through the weak acid tower into which water is showered. Meanwhile the weak acid from the bottom of this is showered over the limestone in the strong acid tower, and the strong acid from the bottom of the second tower then goes to the recovery towers. It is here again that Mr. Thorne's engineering knowledge and ingenuity are seen at work. The construction and operation of the recovery systems in which last traces of sulphur dioxide from the relief of the digesters produces an acid of high and uniform strength is a very important factor in the production of high grade sulphite pulp. The recovered gases are, of course, cooled before passing into the recovery towers and a special type of cooler designed by Mr. Thorne is used in this connection also. From the acid towers the acid is first passed through a settling basin so as to catch sludge from the limestone and thus keep the acid cleaner. The acid is stored in three tanks, through which it passes in series so that a uniform acid at a temperature practically constant at 30 degrees centigrade is always ready for use in the digesters.

A clever idea is the use of tile in concrete for ventilating and heating ducts. There will be no corroded pipe to replace every little while. Each department has its individual indirect hot-air heating system.

### A Model Digester Plant.

At the present time there are four digesters in operation and work is under way for an extension to accommodate five more which will be complete this year or early in 1921. A considerable part of the material is already on the ground. The digesters are 17 x 56 ft. and have a capacity of 34 cords of chips, from which 19 tons of pulp is made per charge. The cooking varies according to the particular purpose for which the pulp is intended, but the quality is constantly maintained at the highest possible point. One of the remarkable features of this plant is that an average of only from 210 to 215 pounds of sulphur per ton of bleached pulp, equal to 195 lb. unbleached, is being constantly maintained. The limestone consumption runs about 280 pounds per ton and the quality of wood and control of cooking is such that an excellent white pulp is obtained with a bleach consumption of from 12 to 14 per cent on the basis of 35 per cent available chlorine. The whole plant is of re-enforced concrete and brick, so that it is absolutely fireproof, and where steel beams are necessary they are encased in concrete both for protection against possible local conflagrations, such as might occur in the chip bins and also to protect them from corrosion by possible traces of acid in the atmosphere. The cooking period is controlled, not alone by samples of cooking liquor, but finally by a careful examination of a sample of pulp taken direct from digester. In this way it is possible to cook down the chips until they are thoroughly delignified and there are no shives. The effect of this procedure is evident in the color, strength and uniformity of the stock and particularly



*Dry End, Pulp Drying Machine.*

in the low proportion of screenings, which amounts to only about 1 $\frac{1}{2}$  per cent. In connection with the cleanliness of the pulp, it is interesting to note that smoking is only prohibited where there is a possibility of the ashes contaminating the stock, such as might result in the bleachers or machine room.

The acid is admitted to the digesters shortly after the chips have begun to flow in and being introduced at the bottom the incoming liquid naturally forces the air practically all out of the digester and this makes the cooking process take place more readily and efficiently.



*Panorama of the New Sulphite Mill of the Kiordo  
the South-west, looking across the*

This reduction aids in supplying the 100 degrees approximately of superheat at which the steam enters the digesters and this quality of steam results in a decrease steam consumption per ton.

The bottom digester casing contains a steam inlet for assisting at the beginning of the blow and the digester content is blown into one of the four blow pits, each of which has a capacity of two charges. Because of the care in cooking no battle plate is required. The elimination of this plate also does away with the breaking up of knots, and consequently the stock is free from these objectionable dark specks. These huge concrete chambers are furnished with showers and hose streams for washing the stock, after the waste liquor has drained off through the perforated bottom. The thoughtfulness of the engineers is shown in the provision that has been made for recovery of the strong waste liquor in case it be found advisable at a later time to make use of this presently wasted material.

#### Screen Room.

The thoroughly washed stock is passed first through a centrifugal knitter and is then thickened as a supplementary washing. It is then diluted to the proper consistency and passed through the coarse flat screens which are fitted with plates with cuts .020 inches wide. From the flat screens the stock passes over patented felt bottom riffles where the thickness, depth of stock and rate of flow is very carefully regulated. Here any coarse fibre, pieces of knots and mineral matter etc. and the stock is then passed to the fine screen which has plates cut eight or nine thousandths of an inch.

#### Bleachery.

Before Bleaching the stock is again thickened so as to make the Bleaching operation more rapid, efficient

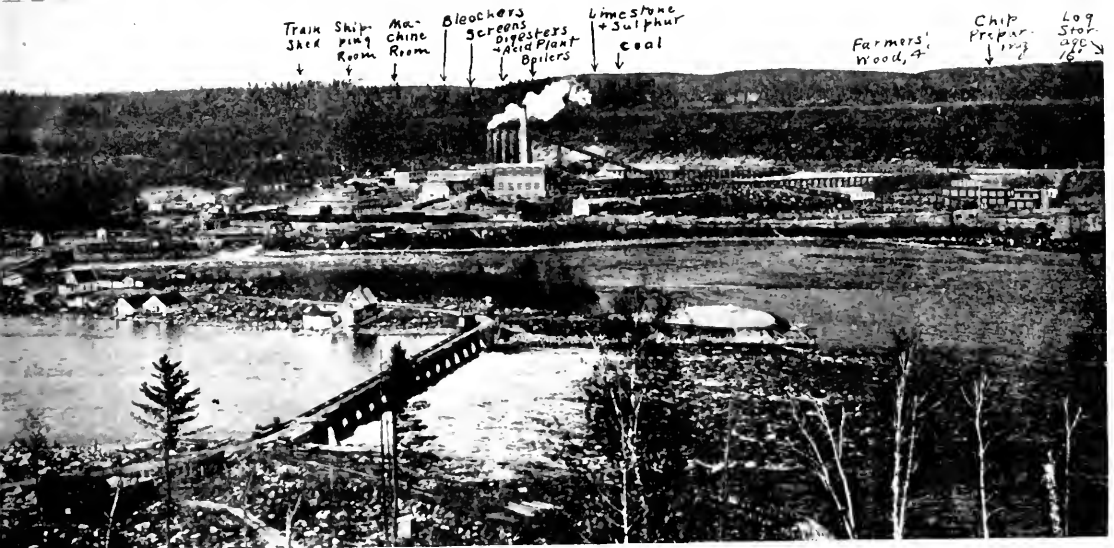
and economical. Seven Bellmer bleachers with a capacity of eight tons each per charge are used in the bleach plant. They are built right into the mill and the operation is observed through a narrow opening, around which is a concrete fence. It is practically impossible for dirt to get into the stock once the knots and similar impurities are removed by the rifflers and screens.

At the present time bleaching powder is being used. This is mixed in a conical vessel supplied with piney agitator and stored in sufficient quantity to make it easy to maintain constant strength, and to obtain clear bleaching liquor. All bleach and chlorine piping and containers are painted in green and appropriate distinguishing colors are used for other pipe lines such as stock, water, high and low pressure steam, etc.

The original plan of the engineers called for an electrolytic bleach plant but the installation of this department had not been contemplated just yet. The scarcity, high price and poor quality of available bleaching powder at the present time has made it necessary for the company immediately to erect a temporary bleach plant, where 180 cells will be in operation in a few weeks to take care of the present emergency. The capacity will be the equivalent of 16 tons of bleaching powder in 24 hours.

A bleaching plant in reinforced concrete is under construction and will be ready next year with a capacity that will take care of the full production of 500 tons of pulp per day, the ultimate capacity for which the mill has been designed. In the bleach plant, as in other departments, the advantage of having a location that permits materials to be moved by gravity from the railway to the point of consumption is evident.





Company's Kipawa plant at Temiskaming, Que., from  
Ontario River from the Ontario side.

### The Machine Room.

Passing from the Bellmers the stock is thoroughly washed from all traces of chlorine, and is again screened. The screening system and the care taken in regard to the cleanliness of the stock is certainly a revelation and were it not for the quality that makes the advantage of such care obvious, one would question whether it was worth while to take so much trouble. One is impressed throughout the plant, however, that the ultimate aim of Mr. Thorne has been the ideal plant for making perfect pulp, and it is certainly the keeping of this ideal constantly in mind that is resulting in a close approach to the end desired.

From the re-screens the pulp is thickened to a consistency which makes it the more readily stored in the chests and more conveniently delivered to the machines. The machine chests are furnished with another of Mr. Thorne's novelties in the form of an impeller similar to that used in the Bellmer bleacher, so that the stock is kept thoroughly agitated while in storage.

The drying machine differs from that ordinarily seen in a pulp mill on this side of the water in that it is of the Fourdrinier type rather than the cylinder. There are one or two others in Canada used for this purpose and there is one Fourdrinier wet-end that is being used as a de-watering machine. The Kipawa machine, however, dries a sheet 148 inches wide at the rate of 90 tons per 24 hours. A vapor absorption device is being added which, by a more efficient removal of the evaporated moisture, will result in an increase of 10 per cent in efficiency, and the capacity will then be 100 tons of dry pulp per day. The average test is 90 per cent air dry. The manner of threading the sheet over the driers gives not only the maximum contact of the sheet with the dryer surface,

leaving an exposed arc of something like 18 inches of a 5 ft. dryer, but also exposes a maximum amount of surface of the heated pulp, from which the moisture readily evaporates.

The pulp is cut into strips and chopped off any length that the customer desires, so that the bales may be made 27 x 36 inches, 36 x 39 or whatever may be desired. Samples for moisture, cleanliness, color and strength are taken at frequent intervals, and the bales are stamped with the number of the bale, the moisture test and the wet weight, so that when received by the paper mill the amount of dry pulp is immediately known. Two baling presses are used in making compressed bales for shipment.

At the present time the sheets are taken from the machine by hand, but an automatic layby will soon be installed that will do away with the services of two men per shift. This mention of men recalls the rather remarkable fact that the whole plant in turning out 140 tons per day with the employment of only 188 men. This is no doubt a record, at least in Canadian experience, and it is a record that the management has hopes of improving.

A second machine is now on order, and will soon be in operation on the other side of the room now occupied by No. 1. All provision has been made for its installation. At present the pulp that is not taken care of by the drying machine is run over the two wet machines in the adjoining department. Another wet machine is also on order.

The car tracks enter the building adjoining the wet machine room which is the shipping room department. Two tracks passing through this department make it possible to load six cars at one time.

Pulp bales are hauled with electric trucks from press to cars.

All rotten wood is discarded completely. All chips are tested for moisture content as well as for the uniformity of size.

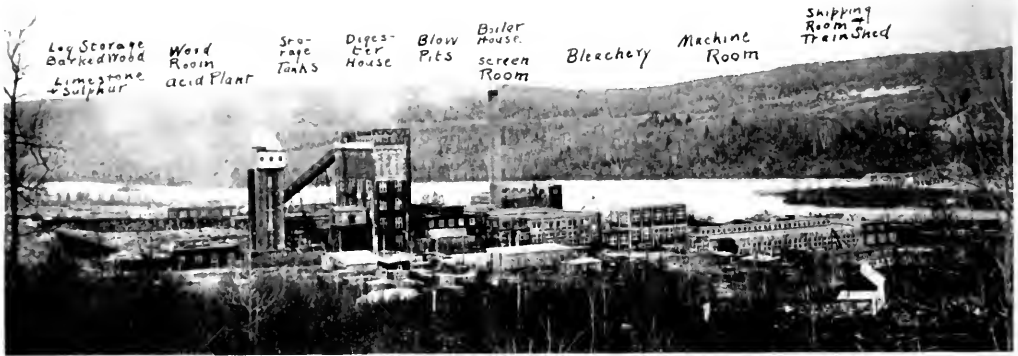
#### Testing the Pulp.

A special laboratory is maintained for the purpose of testing the pulp for color, cleanliness, strength, etc., in accordance with the latest method.

#### Started Without a Hitch.

The starting of a big mill is a matter of considerable anxiety and it is a great source of satisfaction to Mr. Thorne, Mr. Ketchen and the other able members of his staff down to the last workman, and it is a matter for sincere congratulation that the work of each department, from the shovelling of the first sul-

cellent manufacturing facilities furnished by the location of the railway, waterways and power, and the contour of the comparatively flat space at the foot of Lake Temiskaming. Competent landscape architects and the expert town planner, Thomas Adams, have laid out an ideal town site on the beautiful slope overlooking the waters of the lake and river, across which extends an eye-resting view of hills covered with the dark green of spruce and the lighter green of birch and poplar, broken here and there with a piece of pasture land or a brown field just ploughed for a crop. On this beautiful spot there have already been erected some 56 houses for the permanent occupation of the workmen of the mill. There is an attractive and convenient hospital building as well as a commodious community centre in which there is a moving picture theatre, other recreation facilities and the



View of Company's Sulphite Mill from North-East.

phur into the burner down to starting of the drying machine, went off without a single hitch. Each piece of apparatus and each process performed its function from the beginning with entire satisfaction, and there have been no interruptions to the continuous production of first quality pulp. It may be that the management will find places here and there where the work can be made to run a little more smoothly or efficiently, or where the introduction of some machine will save manual labor, but there cannot be very many mistakes in a mill in which the acid maker has almost nothing to do but to see that his hoppers contain sulphur and his pumps are properly oiled or where a digester foreman is supplied with acid of constant temperature and strength and chips of uniform size and quality and whose continuous records from his recording instruments show him at all points the exact performance of his equipment. A disintegrator is furnished for macerating the "broke" from the drying machine so that it can be returned to the system, but if a man were operating this machine on piece work he would certainly starve to death.

#### The Town Site.

Carving a town out of a virgin forest is not a matter to be undertaken lightly or to be accomplished hurriedly. The original inspection of the location took into consideration the beauty of the spot for a healthful, attractive community as well as because of the ex-

cellent manufacturing facilities furnished by the location of the railway, waterways and power, and the contour of the comparatively flat space at the foot of Lake Temiskaming. Competent landscape architects and the expert town planner, Thomas Adams, have laid out an ideal town site on the beautiful slope overlooking the waters of the lake and river, across which extends an eye-resting view of hills covered with the dark green of spruce and the lighter green of birch and poplar, broken here and there with a piece of pasture land or a brown field just ploughed for a crop. On this beautiful spot there have already been erected some 56 houses for the permanent occupation of the workmen of the mill. There is an attractive and convenient hospital building as well as a commodious community centre in which there is a moving picture theatre, other recreation facilities and the

offices of the town. A filter plant with chlorinating apparatus and the necessary pumps driven both by electric and gasoline motors is already in operation. There is even a fully equipped jail with proper accommodations for both sexes should anyone be so unhappy as to break the hitherto peaceful record of the community.

By fall it is expected that some 200 houses will be ready for occupancy. These, with the cafeteria, will accommodate the staff of workmen at present employed in the mill. The cafeteria has sleeping accommodation for 100, each man having his own comfortable room furnished with a bed, table, chair and hot and cold water. Besides this there are extensive lavatory facilities equipped with shower-baths and tubs. It may not seem possible, but the company is furnishing room and board at the rate of \$1.00 per day. The dining room will accommodate 200.

The houses are all built on the semi-detached plan. Most of them have six rooms, and they are built on a sufficiently great variety of plant to do away entirely with a chance for monotony of aspect. They are frame houses with Bishoprie board inside to carry the plaster and outside are sheathed with lumber and tar paper and ceased either in brick or stucco. They make a very attractive and comfortable home. Each is finished in stained fir on the first floor and white painted pine above with hardwood floors throughout and equipped with hot water heat. There are ceiling and

wall lighting fixtures with base outlets and even provisions for lighting the commodious wardrobes. A number of the occupants have installed electric ranges as the company furnishes the power at an exceedingly nominal rate.

One can scarcely desire a better built or more convenient house and one would go a long way before finding such at the present time. The rent seems hardly sufficient to pay any interest, let alone a return on the investment.

A separate housing company has been incorporated to conduct the affairs of the town-site.

Members of the staff, not otherwise provided for, are taken care of in the staff house, which is the old

Sanitary conditions for the men in the mill have been taken care of. The rooms are bright and pleasant to work in. A model town is being built for the purpose of giving the employees comfortable, practical and good-looking houses. The nature of the country has been maintained to give the town its charm. The construction of the Mill, Power Plant and Town has been carried out as a strictly engineering proposition, and one which is extremely successful.

Altogether the editor's visit to this new town was a most enjoyable event, and his thanks are extended to the company for the cordial entertainment and the frank discussion of the many interesting points about the mill and the town.



*First Unit of Power Plant at Temiskaming, showing Gatehouse and Forebay.*

Lumsden home, where very comfortable quarters are available a fact that the editor can testify to as well as to the excellence of the cooking and service. Adjoining the staff house is the recreation hall which contains what is said to be the best dance floor in the north country. Tennis-courts and other means of recreation as well as motor-boating are available for those who indulge.

This plant must be considered as being ideal in every respect. Everything is taken into consideration. Improvements and novelties in regard to manufactur-

ing process and labor saving have been introduced.

With a man of Mr. Thorne's standing, as head of the organization, surrounded by able engineers, the development has been carried to success and the proposition will surely succeed.

Our bankers and business men might well take example from this and carry out all future development as an engineering proposition, the manner in which the Riordon Pulp & Paper Company have done it. This would not only be a benefit to the shareholders, but also to the benefit of the Dominion.



## PAPER SECURITIES AS PERMANENT INVESTMENTS.

In their August circular Peabody, Houghteling & Co., Chicago, deal special with pulp and paper mill securities. This firm has been prominent in underwriting operations of several leading Canadian companies. The article says:

The choice of a permanent investment involves two main considerations: the adequacy of the security, under all conditions likely to arise from any years, for the protection of the invested principal; and the adequacy of the available income, under like conditions, for the protection of the interest or dividends which the invested principal is expected to produce. There are, of course, other considerations carrying more or less weight, according to the individual requirements of the investor, but the two above referred to go to the very essence of every bond, note, or preferred stock issue and must in every case be kept in mind if a wise purchase is to be made.

Contrary to the apparent opinion of some, there is a good deal more to the question of what is an adequate security or a good prospect of earnings than may be learned by studying a balance sheet or reading the official letter of a company's president, however important these may be. A balance sheet is chiefly an index of the result of past operations, and the official letter is usually a combined history and prophecy which depends for its value largely on the breadth, foresight and conservatism of the man who wrote it. Both are valuable and both have a place in the examination of an investment, but neither balance sheet, official letter, appraisal, or expert's report is as fundamental a criterion of the stability of an investment as a very simple factor in regard to which nearly every individual is qualified to judge for himself.

This factor, which in the case of a long term investment should take precedence over all others, is the necessary and permanent character of the industry in which the borrower is engaged, for unless the industry is essential to human welfare, in a broad sense, it will be impossible to predicate continued prosperity, over a long term of years, for any company engaged in it.

Without attempting a definition of what constitutes an essential industry, we may assume that the production of pulpwood fibre and newsprint paper comes within that term. In a United States Government publication, dealing with the important part which Pulp and Paper products take in the maintenance of our national life, this significant paragraph appeared:

People read newspapers, books, magazines and placards which are printed on about three-sevenths of all paper manufactured, they box up articles in about one-fourth of it, wrap purchases in about one-seventh; write and typewrite on one-eighth; put a trifle more than one-twentieth of it into buildings and upon walls; and use the remaining one hundredth in sanitary and miscellaneous ways. That the demand for these products of every day use has been on the increase for many years is shown by the fact that in 1880 the production of the United States, per capita, was 18 pounds, while in 1916 it had risen to 118 pounds. Subsequent to 1916 the production in this country fell off some what the increasing demand being met only in part by the production of Canadian mills. This demand has been increasing for many years—directly, with the

growth of population, and indirectly with the spread of education which results in more reading and a higher standard of comfort and convenience.

So much for the necessity and consequent importance of the paper industry. The determination of the strength of the bonds or notes of a particular company engaged in that industry is not difficult if we keep in view the elements essential to its complete success. These are:

1. A supply of pulpwood, so located as to be easily delivered to the mill at reasonable cost, and sufficient to insure operation of the mill for a term of years well exceeding the life of the securities under consideration.
2. Sufficient water power for the cheap and continuous operation of the plant.
3. A modern and conveniently planned mill, capitalized at reasonable figures and with sufficient working capital.
4. A location permitting cheap delivery of raw material used in manufacture, and favorable freight rates on the finished product.
5. Experienced management.

Given the foregoing conditions with a liberal equity behind the bonds or notes, it is safe to predict that the latter will be duly paid off and that there will always be an ample margin of earnings to meet interest charges. A company so equipped and so financed can find a steady and profitable market for its product, because it will always have the advantage over others less favorably situated, nor is it in danger of disastrous competition from new mills, for the available sites for plants of this kind are not numerous nor can the development of those sites which do exist more than keep up with the growing demand for wood fibre products. Time, as well as money, skill, and persistence are required for the completion of such an undertaking.

Our experience with securities of this kind has been as satisfactory as it could possibly have been. In the ten issues we have originated and marketed there has been no loss of principal or interest, and more than 25 per cent of the securities have been paid off serially or prepaid at a premium. This record is largely due to the fact that in preparing to finance a property of this kind we take nothing for granted and leave nothing to chance. The supply of timber, the character and amount of the water power, the design of the mill, the nature of the transportation facilities, the experience of the owners, and the market for the product, all these and other less important details, must meet with our approval before we invest our own funds or ask our clients to invest theirs.

Apart from the investment value of securities of this kind, there is sometimes available an opportunity for a substantial profit, which is attractive to most investors however conservative they may be. The notes of one pulp and paper company, with which we are familiar, were recently offered with the attached privilege of converting them on favorable terms into the common stock of the company, which has since sold well above par.

A feeling of confidence goes with the purchase of a bond or note issued by a sound company producing a commodity which will always be in demand. We recommend to investors that they include in their permanent holdings well selected pulp and paper mill securities.

## LAKE ST. JOHN PULP AND PAPER COMPANY ORGANIZED.

The Lake St. John Pulp and Paper Co. Limited, was recently incorporated under the laws of the Dominion, with a capitalization of \$4,000,000, consisting of 20,000 shares of 8 per cent. cumulative, non-participating preferred stock and 20,000 shares of common stock; par value of shares is \$100. This company takes over the holdings of the Metabetchouan Pulp Company.

The mill is to be located at the mouth of the Metabetchouan River and on the main line of the Canadian Northern Railway, bordering on Lake St. John. The Company has its own water-powers on the Metabetchouan River, where some 22,000 H.P. can be easily developed, and also has contracted for additional power with the Military Electric Company at St. Jerome, Que., which will be furnished at once, if required, while the Company is developing their own water power.

There is abundance of spruce and other woods within easy distance of the mill, contracts for two years supply having already been placed.

The capacity of the mill will be 50 tons groundwood pulp per day to start with. It is expected the mill will be in full operation during this coming winter. Additional grinders can then be added, together with changes and other machinery, and by the fall of 1921 the capacity of the plant will probably be doubled.

The Company will control by lease in its own name, right or through its subsidiaries, areas of timber and pulpwood lands as follows:

174 $\frac{1}{2}$  square miles or 111,840 acres on the Metabetchouan River and other small streams near Lake St. John, Que. The cruise on this property was made by Mr. C. D. Ouellette, of Quebec City, Government Bush Ranger; also Ovide Potvin, Alfred Felion and Maime Brassard, of Ste. Andre, Que. These men report after one month's cruise, 1,100,000 cords of pulpwood of the very finest quality—only trees over 4 inches on the stump to be cut. Messrs. Burke and Dixon, of Bangor, Maine, accompanied by Mr. Jas. J. Steele, of Montreal, visited the property late in June and early in July last. Messrs. Burke and Dixon stayed 21 days on the limits, and they report 850,000 cords of spruce pulpwood on 140 square miles, the balance of 34 $\frac{1}{2}$  square miles they did not go over, but from trappers they met, they were told that it was densely timbered with the best quality of very large spruce. These cruisers confirm the first cruiser's reports, and concluded by saying that a very conservative estimate over all would be 10 cords to the acre, or 1,118,400 cords. They report having measured as much as 40 cords on some acres.

The Company also holds an option on 10 square miles of timber or 6,400 acres near St. Andre, Que., bordering on a small river running into the Metabetchouan River, on which there are some 80,000 cords of pulpwood. This is only a short distance from the mill site near St. Jerome Village.

Also, large quantities of spruce pulpwood can be had from the farmers and settlers around Lake St. John at reasonable prices, and contracts are now being entered into with these farmers, to supply wood for a number of years to come. They are anxious to do this, so as to get a mill built on Lake St. John at the mouth of the Metabetchouan River. This will enable the Company to leave its own limit untouched, if so desired, for years to come.

Qualified men who have studied the situation state

that the wood can be delivered in the mill at \$2 per cord less than at any other mills in the Province. This is due to the unusually short "drive" required, less than two weeks being required to deliver the wood in the mill. The loss to some mills through "sinkage" alone is a very serious factor in their log costs at the mill.

### Water Powers and Property.

The Company will own or control in its own right three water falls on the Metabetchouan River, which can be developed at a nominal cost, to produce up to 22,000 H.P. when developed. The Company is about to enter into an agreement with a Company at Lake St. John, who own an 80-ft. water fall, partly developed, on the Metabetchouan River, about 3 $\frac{1}{2}$  miles from Lake St. John. They are further to develop this power, which will give up to 4,000 H.P. at cost to run mill until the Company's own power is fully developed. It will require 65 H.P. per ton of pulp, which is quite ample for all requirements of a 50-ton daily capacity mill.

In the opinion of experts, the value of the wood on the Metabetchouan Timber Limit, formerly owned by the Metabetchouan Pulp Company, is \$2.50 per cord on the stump, on the basis of 1,118,400 cords, would be worth \$2,795,000. The water powers which are owned outright by the Company, say 22,000 H.P. at \$6 per H.P. undeveloped—this is a much less value than some experts place on such powers—are worth \$132,000. The mill site on the Railway and River at Lake St. John, consisting of five acres of land at \$1,500 per acre is valued at \$7,500. Exemption from taxes for 10 years—figured on the valuation of plant, etc., and at present rate levied on such property—amounts to over \$25,000 making a total value of \$2,959,500. There are other valuable concessions the Company holds, such as contracts for power, wood, lumber, etc., the value of which it is difficult at present to estimate.

### Fire Protection.

About seven years ago the limit-borders in the St. Maurice and Lake St. John District formed what is known as the St. Maurice Protective Association, Limited. This Association employs competent rangers, who have districts which they patrol almost daily during the Summer months. This is done by canoe, speeders, and on foot. Towers have been built, and fire-fighting appliances have been systematically distributed through the district, and also telephones have been installed in some districts.

Since the Association has been organized fire has been practically unknown. The Government has given it wide powers to regulate any and all farmers as to the season fire is to be started for clearing off their lands. The cost to all limit-holders during the seasons of 1917 and 1918 was only 1.3 of a cent, per acre, which is much lower than any other organization of its kind in Canada, and about 200 per cent. less than ranging could be done by each limit-holder.

It can readily be appreciated the value an association such as this gives to standing timber, as owners can feel absolutely safe from fire loss through the carelessness of others.

### Management and Affairs.

Mr. Jas. J. Steele, who is one of the best known mill construction men in Canada and United States, is heavily interested in this Company, and is Vice President and Managing Director. He will be in charge

of all construction work at Lake St. John. Mr. Steele has had a life-long experience in erecting and constructing mills of all kinds as well as paper mills, and the Company is most fortunate in securing his services. The other officers are: President, F. W. McKinnon, M.D., Ottawa; Secretary, J. D. Kennedy, Montreal; Treasurer, F. W. Fee, Ottawa; Solicitor, J. Ogle Carss, D.C.L., Ottawa.

### Timber Supply.

It is estimated that the timber available from the limits now owned by the Company and surrounding territory will ensure a supply for our mill when increased to 200-ton daily capacity, for a period of over 100 years; in other words, it might be said that sufficient supply can be depended upon for all time. These limits were acquired in 1900 and 1901, some 20 years ago, with water power rights. They are more favorably situated than most other limits in the Province of Quebec.

They are located in the very centre of the best farming district in the Province. The country surrounding is thickly populated. The limit is considered to have the best pulpwood in the Province. The Canadian Northern Railway runs along its western side. The limits are practically untouched, except a small corner which was burnt over some 20 years ago, since which time an entire new growth has developed in this area. Because of the closeness of lakes, water powers, rivers and the best railway facilities for shipping, etc., it has been lately remarked by one of the largest lumber dealers that if he owned it he would not accept \$5 per cord on the stump for it.

Referring to the wood that can be bought in the district, Mr. Samson, Mayor of Quebec City; Dr. Mooney, of Quebec, who owns the Little Peribonka Mill and limits, and other prominent men, both in Quebec and Lake St. John, advised building a mill at once, as a mill would be a great money-maker, even if the Company had no limits, because the farmers and residents can furnish pulpwood enough to supply a 200-ton daily capacity mill for 50 years to come.

Farmers and settlers take out yearly in the Lake St. John District from 100,000 to 150,000 cords of pulpwood; 100-ton daily capacity mill requires only from 32,000 to 35,000 cords of pulpwood per annum. From personal knowledge of the District, both Mr. Steele and Mr. Kennedy know that a supply of 75,000 cords of wood per year can be safely counted upon for the next 50 to 75 years, from farmers, settlers and small limit-holders, and at a cost below any other pulp mill in the Province, and without using any of the Company's timber lands.

It has been asked what the cost of a 50-ton daily capacity plant would be when completed. This is very hard to estimate, owing to labor and market conditions, but from engineers' reports on water power development cost, contractors' estimates on erection of buildings, installation of machinery, purchase of machinery, and all necessary equipment, as well as other unforeseen expenses, it is safe to say that \$150,000 will be required for the erection of mills, etc., and \$200,000 for the development of the water powers, making a total outlay of \$650,000 for a 50-ton daily capacity mill.

Further information regarding stock issues, etc., may be obtained from the Lake St. John Pulp Syndicate, 157 St. James St., Montreal.

## BRITISH TRADE NEWS.

(By OUR LONDON CORRESPONDENT)

London, Sept. 1, 1920.

### Paper An International Problem

This week the annual general meeting of Messrs. Benn Brothers Ltd., the large printers, was held under the presidency of Sir John Benn, Bart. In the course of an address to the shareholders, the President said the question of paper had caused the directors no little anxiety. It had been, indeed, by far the greatest of the difficulties with which they have had to deal. Paper was an international problem, and there could be little hope of easement until the world generally settled down to work. They had, he thought, seen the end of profiteering by outside speculators, but they were still faced with the unfortunate determination of many of the large mill proprietors to take full advantage of the present shortage. The directors were basing their calculations for the current year upon their belief that the present position could not last and that there would surely be some measure of relief from the intolerable position of the moment. Speaking on the importance of trade paper, Sir John said in their pages the scientist and the inventor, or the man with an idea, gets an early reward for his talents. Such mundane things as business and workshop management efficiency are discussed and still our industrial life asks for more. This was the best evidence of their claims for the trade Press to be classed as a national asset.

### SERIOUS COAL CRISIS.

The miners threaten to come out on strike on the 20th September if 14s. 2d. is not taken off the coal per ton and they allowed an extra 2s. per shift. The Government suggest that payment should be made on the output. Miners also want the coal mines nationalized and they have voted in favor of it. Now should this strike come about, I see work in the mills dislocated; indeed, they may have to shut down. There is also a danger of the railroad men joining the miners. Should they do so the transport workers may come out also and then we will be faced with one of the greatest crises in labor upheaval that England has ever experienced. Many labor leaders are trying to prevent a strike and it is to be hoped for the sake of the pulp and paper industries in the United Kingdom the Government will find some way of satisfying the miners and so save untold suffering though unemployment in the mills.

### Industrial Chemists.

According to the annual report of the National Association of Industrial Chemists the number of unemployed chemists is increasing very rapidly. The future outlook for them at present is distinctly discouraging and it is suggested they should unite to preserve their own interests.

### Great Fires in Russia.

It is quite evident the raw material for pulp in the Russian industry, when it is revived,—if ever it will be—suffering considerably at present through the ravages of fire. By way of Sweden comes the news that terrible fires are raging in Russia in the forests and towns and villages have been wiped out. Tens of thousands of acres of forest in the Moscow district alone have been destroyed and it is feared some pulp mills have gone up in the flames. In pre-war days Russia practically supplied Germany with pulpwood so that the two countries will feel the loss occasioned

by the destruction of vast forests, so badly needed in these post-war days.

#### State of the Paper Industry.

There is still a good demand for newsprint and for other papers inquiries are numerous and a good volume of business is passing for this time of the year. Kraft is easier in price at £80 a ton. The Burnley Town Council have passed plans for extensions to the Burnley Paper Works, Calder Vale, and the Heywood Town Council have also accepted plans for an extension to the Heap Bridge Paper Mill, owned by Messrs. Yates, Duxbury & Sons Ltd. Most of the British Mills are extending or increasing their capital and these are signs of progress and increasing trade.

#### Notelets.

German paper clothing can now be bought in London for less than the cost price of a song book.

Papermakers are well supplied with pulp for the present. Large shipments continue to arrive from Canada. The greater part consists of groundwood—but it will soon find a market in England.

Quotations for all pulps are unchanged. The market is dull.

The West Indies is now talked about as a centre for papermaking from bamboo. Those who have visited the West Indies, like myself, know that papermaking would be on a very small scale. Labor will be cheap enough but one would like to see more bamboo.

The technical schools in papermaking are now getting their winter programs ready. Classes are usually arranged for boys and men.

Chemicals are dearer in England owing to the railroads increasing rates.

The envelope was introduced in 1820 in Birmingham, but it did not come into general use until after 1840, the year stamps were introduced. Today the trade in envelopes and the paper for them is enormous.

A good many U. S. A. papermen are on a visit to England looking round—but not for pulp.

#### PULP AND PAPER WILL BE THERE.

When the Sixth National Exposition of Chemical Industries opens its doors in Grand Central Palace, New York City, Monday, Sept. 20, it will be the biggest display of its kind that has ever been seen. The total number of exhibitors to date exceeds 450, as against a high record for previous shows of 358, made in Chicago last year.

To house this large display four floors of the Palace are necessary, and the Chemical Show is the only exposition, outside of the annual automobile show, that requires such enormous floor space. There will be a remarkably wide range to the exhibits this year, and it has been decided to divide the exposition into sections. The Fuel Economy Division and the Material Handling Division, both new this year have attracted many prominent concerns.

Five symposiums are on the week's program, and at all of these men of prominence in the chemical world will speak. The symposiums are divided into the following classifications: Fuel Economy, Materials Handling, Industrial Management, Chemical Engineering and Ceramics. Motion pictures will be a feature every evening, and these should prove of great interest to the public.

One of the features of the week will be the meeting of Chemical Warfare Post, American Legion. At the

request of this post the management set aside the evening of Wednesday, Sept. 22, for them to transact business. The post is composed of men who served in the war, and will be open to all C.W.S. men.

Dr. Charles H. Herty, chairman of the advisory board of the exposition, will open the display at 8 p.m. on the evening of Monday, Sept. 20. He will be followed by Charles L. Reese, who will talk on "Co-operation in the Industries," and Erastus Hopkins, who will talk on "Problems of the 'American Exporter'". Sir George E. Foster, Canadian Minister of Trade and Finance, will be the guest of the evening.

The motion picture program for the opening night consists of two subjects, "The United States Ammonium Nitrate Plant No. 2 at Muscle Shoals," by courtesy of Dwight P. Robinson and Co., and "Modern Packaging Methods," by courtesy of the Pneumatic Seal Corporation.

#### HOW STRONG IS A BOX.

In a test for strength of shipping boxes, the object of which is a simulation of the rough knocks, bumps, and jars of handling which a loaded box may encounter in railroad traffic, there has been designed a machine by which the railroad usage which a box may meet in a 2,000 mile haul can be duplicated in four or five minutes.

The first machine of this kind, known as the drum box testing machine, was designed by the U. S. Government Forest Products Laboratory at Madison, Wis. The Mellon Institute installation is an improvement over the original tester in that the inconvenience of overhead pulleys and shafting has been done away with by the substitution of a reduction gear for cutting down the motor speed to the drum speed of 2 R.P.M.



A valuable field of investigation, and scientific study of the construction and materials of packages is opened up by the new machine, such as best methods of interior and exterior packing for fragile or irregular shaped objects; the determination of proper specifications for containers carrying various commodities, etc.

An offer of free service in the designing of scientific packing methods for various commodities capable of being shipped in fibre containers, which includes the use of this equipment, is being advertised by the Container Club of Chicago, an association composed of corrugated and solid fibre box manufacturers of the United States.

# PULP AND PAPER NEWS

Mr. N. L. Martin, Secretary of the Canadian Paper Trade Association has sent out a call to the annual meeting of the Association to be held at the King Edward Hotel, Toronto, Oct. 6th and 7th. The members of the Book and Writing Paper Section of the Canadian Pulp and Paper Association have been asked to be present and an invitation has been extended to Mr. W. C. Ridgway, General Secretary of the National Paper Association of the United States to attend the gathering. An acceptance has been received and Mr. Ridgway will give an address. Important matters to be considered with the manufacturers are the protection of the paper dealer and direct selling by the mills. The secretary has asked for written views on these subjects and these will be tabulated and a consolidated report on them read at the meeting.

The United Farmers do not yet see their way clear to commence the publication of a daily newspaper. They will lead up to it gradually. At the annual meeting of the United Farmers Publishing Company in Toronto this week, the president, Col. J. Z. Fraser, announced that though the rising cost of everything connected with a newspaper, made a daily practically impossible, before the end of the year, The Farmers' Sun, the U. F. O. official organ, would likely be published three times, instead of twice a week.

The Jost Pulpwood Company of Campbellton, Limited, has been granted incorporation with power to deal in general pulpwood and lumbering business and with a capital stock of \$75,000 and head office at Campbellton, N.B. The incorporators are P. M. Jost, A. E. Weaver, Dougall Cushing, G. S. McFadden and D. L. Labbe, all of Quebec province.

The members of the Imperial Press Conference reached Toronto this week on their return journey after visiting the Canadian West and on Tuesday were the guests of the directors of the Canadian National Exhibition at a noon day luncheon at which Viscount Barnham was the chief speaker. Before leaving on their special trains for the east the delegates were entertained at a banquet at Government House.

Mr. George Erskine of the Toronto office of the George H. Mead Co. was in Montreal this week attending a meeting of the board section of the Canadian Pulp and Paper Association.

The many friends of Mr. L. E. H. Harvey, of the Toronto office of the George H. Mead Company, will be pleased to learn that he is progressing favorably after having undergone an operation in a hospital in Montreal.

Among the improvements being made at the plant of the Aubin Power and Paper Company at Troquois Falls, Ont., is the rebuilding of their barking drum plant. For the past three years they have been operating four American Barking drums, and recently placed their order for four additional drums with the Canadian Barking Drum Co., which will increase their barking capacity fifty per cent.

Good progress is being made with the rebuilding of the mill of the Don Valley Paper Co., Ltd., Toronto. The walls have been completed and in a short time the paper machine will be housed in what is practically a new mill. It was not found necessary to move the machine, the walls having been built to replace the old ones.

Mr. R. T. Taylor of the Keystone Press, Montreal, was in Toronto this week visiting his friend Mr. Charles Allen of the Allen Paper Co. Ltd.

Mr. R. B. Foulis, superintendent of the Georgetown Coating Paper Company, and his wife and family, who have been visiting friends in their old home in Scotland, arrived home this week after a very enjoyable trip abroad.

Mr. W. E. Dumeau, president, and Mr. J. R. Evans, Australian representative of the Export Association of Canada, Limited, were visitors at the head office of the Provincial Paper Mills, Limited, in Toronto this week. Mr. Arthur M. Holmes, a paper buyer from Wellington, Australia, also called at the Interlake Tissue Mills office.

E. Pullan and Co., Limited, wipers and waste papers, Toronto, has an excellent exhibit at the National Exhibition in Toronto, samples of mop cloth, polishing cheese cloth, sweat cloth, cotton waste, lace curtains, polish linen, etc., being attractively arranged. The display created a good deal of interest and was viewed by many interested in the reclaiming of waste materials.

Considerable progress has already been made by the Fort William Paper Company, Limited, recently organized, with a capitalization of \$15,000,000 and whose new mill at Fort William is now under construction. The unit now being built is a groundwood mill, with a capacity of 120 tons of groundwood per day. Although not connected with the Spanish River Pulp and Paper Mills Company, the new board comprises several men who are also officers of the Spanish River Co. The officers of the Fort William company are as follows:

President, John G. Sutherland, Dayton, Ohio; Vice-President, Lieut. Col. Thomas Gibson, Toronto; Secretary and Assistant Treasurer, J. G. Gibson, Toronto; General Manager and Treasurer, W. L. Bird of Fort William. These four gentlemen and U. M. Hurlburt of Dayton, Ohio, form the Board of Directors.

Dr. Ralph H. McKee, who delivered the interesting address on fuel and alcohol from sulphite waste liquor at the summer meeting of the Technical Section, passed through Montreal, Monday, on his return from a business trip to England.

The Mattagami Pulp and Paper Mills are making extensive improvements and additions at Smooth Rock Falls, Ont. Several outbuildings are being erected as well as a new dining hall and a machine shop. Houses to accommodate sixteen families have been completed, while the foundations have been laid for eight more cottages. The company is very busy at the present



time and finds a ready market for all the sulphite pulp which it can produce.

The question of granting the English River timber limit concession to E. W. Backus again came before members of the Ontario Cabinet in Toronto this week when Peter Heenan, M.P.P. and others, including the Mayor of Kenora, made a further statement in support of the application, Premier Drury, Hon. W. E. Raney, Hon. Peter Smith and Hon. F. C. Biggs were present and heard the case presented but gave no decision. The feeling around the Parliament Buildings, it is stated, is that what is asked will not be granted.

Reference has been made to the water supply extension at St. Johns, N.B. and the Nashwaak Pulp and Paper Co. It is understood that when the additional water is available, the company will increase considerably the output of their product.

William J. Bishop, Ltd., have the contract for building the booms and crib dams for the Cape Breton Pulp Co., to which reference was made in our last issue.

J. T. Tractors, Cleveland, Ohio, have sent out a booklet with a couple of good pictures showing tractors on a logging operation.

Mr. J. A. Bothwell, General Manager of the Brompton Pulp and Paper Co. and Vice President of the Canadian Export Paper Co., sailed from Antwerp, September 5th, on the Lapland.

On an average of thirty-five carloads of pulpwood from Northern Ontario is being shipped into Thorold every day, according to railway officials. There is also a quantity of pulpwood being sent into Merriton. To offset this on an average of twelve cars of paper is being sent each day from the mills of these towns for distribution. Of this shipment eight cars alone are sent each day to Chicago, and the remaining four are sent to distributing agents in Ontario.

A despatch from North Bay, Ont., says that the Mattagami Pulp and Paper Co., Smooth Rock Falls, are increasing their present capacity by one hundred per cent., which means that the new production will be 250 tons of woodpulp daily.

#### MICRO-ORGANISMS ON OLD PAPERS.

(From La Revue Universelle de la Papeterie.)

At one of the meetings of the Academie des Sciences the question of the presence of microorganisms on papers was brought forward.

The raw materials which enter into the manufacture of paper are subjected to so many causes of infection that there is no wonder that they carry numerous microorganisms. Contrary to the general opinion, these organisms are not destroyed by the various treatments to which the pulp is subjected, and they even resist a temperature of 120 deg. C. in the autoclave. Dr. Galippe has proved this. It is in this manner that laboratory filter paper is contaminated. For other kinds of paper, the harm, if it exists, is without importance.

Neither time nor heat have any effect on these infinitely small organisms, which can move about and reproduce themselves indefinitely after having been restored to life in the culture medium.

Dr. Galippe conducted his experiments on papers of the 15th and 15th centuries, and even on Chinese manuscripts older than the invention of printing and on Egyptian papyrus of about 3,000 B. C. In every case microorganisms were found.—A.P.C.

#### REGARDING SHIPMENTS TO WEST INDIES.

The following letter is printed, not because of the compliment to our International Number, though that is appreciated, but because the man on the spot has something important to say regarding shipments of paper to the West Indies.

The Editor,

Pulp & Paper Magazine of Canada.

Dear Sir,

I have to acknowledge the receipt of your letter of the 9th July, and by recent opportunity the copy of the Industrial Number of the Pulp & Paper Magazine, for which I have to thank you. I have perused this Magazine carefully, and have done so with great interest. The information given in regard to invoicing and shipping being very complete.

I would take the liberty of remarking that under the head "Invoicing", shipments of paper to the West Indies should always be accompanied with a certificate of origin. Several complaints have been received at this office from local firms in reference to omissions in regard to this matter. When the certificates are not forwarded importers are deprived of the benefit of the preference rate of duty, and then have to obtain a rebate when the certificates are forwarded.

In reference to "Shipping", I would state that it is very necessary that shipments should be made through Canadian and not through New York points, as it is within the writer's knowledge that shipments of paper to New York have necessitated packing it in cases, which adds considerable to the cost, and in addition, West Indian merchants object very strongly to paying for Canadian goods in New York currency, and several protests have recently been made by firms in regard to this practice.

Printing paper to the West Indies is generally shipped flat in bundles at about five reams.

I am very glad to have the list of pulp and paper mills in Canada given in the Magazine, as I am receiving several West Indian inquiries from agents in regard to Canadian paper mills and houses.

Yours faithfully,

LEWIS M. B. MEYERS,

Actg. Canadian Trade Commissioner.

Barbadoes, B. W. I.

August 23, 1920.

#### HAMMERMILL BUYS QUEBEC TIMBER.

Quebec, Sept. 13.—The Matane Lumber and Development Railway, owned by O'Brien and Dohey, has sold all its assets, real and personal, to an American company, the Hammermill Paper Company, of Erie, Pa. The deal, which involves the price of several million dollars, was completed last week in Montreal.

The timber lands acquired with the mill site, river improvements, etc., lie on the Rivers Matane and Cap Chat, on the south shore of the St. Lawrence, comprising an area of 133,000 acres.

L. G. Belley, K.C., of this city, who directed the purchase for the Hammermill Paper Company, states that his clients are to take immediate possession of their holdings, and will start their fall and winter operations this week.

The Hammermill Paper Company is a big industrial concern, manufacturing high-grade paper, its plant being situated with docking facilities on Lake Erie. Its head office in Canada will be in the city of Quebec.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Sept. 10.—The consensus of opinion among paper men generally is that the mills will have to protect themselves against the increased freight rate of forty per cent and that this and other circumstances will cause a stiffening of prices a little later on. There is, of course, the other view that the price is going to be regulated in the old way according to the law of supply and demand and that with the closing down of factories and the laying off of hands which is being done at the present time, the demand for paper products is going to fall off which in turn will mean lower prices. It is not held, however, that any slump in prices is coming. The fact appears to be that there is a decided slackening off in orders at the present time. But the quiet time among the printers and less enquiries for paper among the jobbers, have had no effect on prices and the fact remains that stock is just as hard to get and the warehouses are just about as low in stock as they ever have been during the recent rush years of the paper trade.

### Box Makers are Quiet.

In one department of the paper industry at least a distinct lull in business is discernable. The closing of a number of the boot and shoe factories and other institutions using paper boxes has had a marked effect on the paper box trade and this is said to be showing some signs of reacting on the manufacturing end of the box board industry. Despite the fact that most of the mills report business good, the users of board in Toronto and district say that they are experiencing nothing like the difficulty in getting supplies of board now, while a few weeks ago it was almost impossible to get sufficient to keep the box manufacturers working. While this is so there does not appear to be any indication of any slackening of business as far as the box board manufacturers go. Mills are just as busy as ever and they have a full order book, although it is predicted by some that sooner or later the industry is going to be affected by the slackening of demand for paper boxes.

### Bristols Going Up.

While prices in Canada have been holding firm, local jobbers have been advised of increases on American Bristols not made in Canada. Index Bristols, for instance, which are extensively imported into this country and the records among the jobbers in Toronto show that from July 25th to August 30 there was an increase of 1¢ a pound. When the increased freight rates are considered and allowance made for the difference in exchange, it is reckoned that the Canadian jobber has to pay at least a cent and half a pound more for his index Bristols. In the same period Bristol board for shipment in September went up a cent a pound which indicates that there is no weakening of prices in these lines across the border.

### After Canadian Business.

It has developed during the past week that both English and American buyers have been after Canadian business and some jobbing houses are said to have made purchases of English book papers, although

immediate shipment of course was not promised. The English paper bought is about the same price as the Canadian No. 1 but the purchaser has the benefit of the exchange and is able to make a fair profit on the imported article. In this connection it is worthy of note that a Scotch paper seller who has just reached Edinburg after a visit to Canada states in a letter to a Toronto jobber that on his return he found paper prices to have advanced from two to three cents a pound during his absence and that it was being predicted that the autumn would see a further advance. In the meantime supplies were not any more plentiful than they were a year ago in that country. It is known also that the week saw American salesmen in Ontario endeavoring to place orders for sulphite boards from the mills in Maine. They quoted a price of 18¢, but that didn't include duty and exchange considerations which would make the price higher than the goods can be obtained for in Canada where the price is 22½¢ per pound. While no business was done with the Canadian dealers as far as can be learned the fact of the American mills seeking a market in Canada is taken as an indication that the American manufacturers have an eye to the future when the demand for their product on their own side of the line will not be so great as it is at present.

### Pulp Still High.

The manufacture of paper is still being carried on under the greatest difficulty as far as the scarcity and high price of raw material are concerned. One Toronto mill this week paid as high as \$170 for ground wood pulp and the buyer did not secure it without considerable combing. Other lines of pulp and ingredients are proportionately high and much of it is almost unobtainable, particularly groundwood pulp.

### Rag and Paper Stock.

The waste paper market as a whole has been quieter the past two weeks, with practically no changes in prices except on hard and soft white shavings which showed a slight advance under renewed inquiries from consuming sources. Dealers as a general rule look optimistically to the future and higher prices are still talked of in the trade. One dealer reports having received \$6.00 per cwt for No. 1 kraft but this is considered an extra quality packing. Mixed papers are moving in usual quantities and some of the mills report good stocks on hand. There are enough orders in the market however, to keep the price firm. Most paper stock dealers are watching the pulp situation closely as they feel that this will be the determining factor in the mixed and newspaper market this fall.

	Per Cwt. F.O.B. Toronto	
No. 1 shirt cuttings	\$21.00	\$22.00
No. 1 unbleached cotton cuttings	\$16.50	\$17.00
No. 1 fancy shirt cuttings	\$12.50	\$13.00
No. 1 blue overall cuttings	\$11.50	\$12.50
Bleached shoe clip	\$15.50	\$16.00
White cotton hosiery cuttings	\$16.50	\$17.00
Light colored hosiery cuttings	\$13.00	\$14.00
New light flannel cuttings	\$12.50	\$13.00
No. 2 white shirt cuttings	\$13.00	\$13.50

City thirds and blues (repacked), No. 15	\$3.75—\$4.00
Flocks and satinettes	\$2.00—\$2.25
Tailor rags	\$2.00—\$2.10
Gunny bagging	\$2.00—\$2.25
Manila rope	\$6.00—\$6.50
No. 1 white envelope cuttings	\$8.00—\$8.50
No. 1 soft white shavings	\$7.00—\$7.50
White blanks	\$5.75—\$6.00
Heavy ledger stock	\$3.75—\$4.25
No. 1 magazine	\$3.50—\$3.60
No. 1 book stock	\$2.75—\$2.90
No. 1 manila cuttings	\$5.00—\$5.25
No. 1 print manila	\$2.25—\$2.50
Folded news	\$2.25—\$2.35
Over issue, news	\$2.50
Kraft	\$5.25—\$5.50
No. 1 clean and mixed papers	\$2.10—\$2.20

### NEW YORK MARKETS.

New York, September 11. Although buyers of paper are keeping out of the spot market as much as possible, there is still a great deal of trade activity in various quarters and the situation displays no earmarks of easiness. On the contrary, paper prices are firm to strong and the tendency in the majority of cases is distinctly upward. With the fall drawing near and everyone looking for the usual stimulation of demand that develops at about this time of the year, unsold stocks of all kinds of paper are being held with renewed firmness and consumers looking for fresh supplies are finding it necessary to meet full quoted figures to cover their wants.

It must be said, however, that the spot market is showing greater quietness than in a long time. Buyers evidently are eking out contract supplies in such a manner as to enable them to refrain from absorbing further amounts of paper excepting in a limited way, and the movement of supplies to the transient trade is probably lighter than it has been at any period thus far this year. Some representative members of the trade express the belief that the present condition of the market can be likened to the "calm before the storm," that is to say, that buyers are keeping out of sight preparatory to descending on the market later on with a view of covering fall and winter requirements that have been left open up to the present. At any rate, paper manufacturers and dealers expect a busy autumn, and everything would seem to point to their expectations being realized. Large business concerns are planning huge advertising campaigns, retail establishments are preparing for a banner fall and winter business, paper box plants are booking voluminous orders for their product, publishers are seeking ways and means to secure additional paper so as to enlarge their publications; in short, various factors are in favor of a heavy consumption of paper during the next few months.

Possibly the most important market development of the past several days is the announcement by the International Paper Company of an increase of \$15 a ton in its prices on newsprint for the last quarter of this year. The price for the current quarter was \$115 per ton and the increase as announced will make the price \$130 a ton, or 6.50 cents per pound, for newsprint in standard rolls in load lots f.o.b. mill. The I.P. states that the advance in prices is necessary because of the rising cost of production. Other news-

print manufacturers are falling in line and are increasing their contract prices in accordance with the new basis fixed by the International.

There is a fair demand for spot lots of newsprint, and the great bulk of supply being offered is finding ready buyers. Small lots of roll news is selling at 11 cents a pound and higher in some cases although a more representative market price for prompt shipments at present is between 11 and 12 cents. Publishers obviously are keeping as much out of the market as their pressing wants will permit, being enabled to do so to a greater extent at the moment than hitherto for the reason that now is the time of the year when the consumption of newsprint is at about its lowest. A brief conversation with any publisher will divulge that nearly every newspaper in the country is short of paper required to fill out requirements over the balance of the year, and there are many members of the trade who predict that publishers will flock into the market again in search of supplies in the near future.

Book papers rule quotably strong and supplies are far from adequate to satisfy the wants of consumers. Mills are running at capacity and are shipping out their product on contract as quickly as it becomes available. Very little tonnage for the remainder of the year remains in manufacturers' hands and those having some output not contracted for are not anxious to dispose of such supplies for the present. Prices on book papers range around 17.50 cents a pound for machine finished book, between 19 and 20 cents on super-endered and from 21 cents upward on coated book.

Wrappings are moving in consistent fashion and at steady prices. Demand for kraft wrappings is firm as the market and most manufacturers are sold up on this grade. Tissues are firm in price and are sought in steady volume, although most of the movement into consuming channels is on contracts. There is a relatively active call for glassine papers and cover stock, and mills are finding it next to impossible to accumulate stocks of these papers.

The board market is firm and active. Box makers are operating their plants at a lively basis and are consuming increasing quantities of board while preparing customers for the fall clothing season. Prices on board range around \$120 per ton for plain chip and \$130 for filled news and manufacturers say that rising costs of production are likely to compel them to advance quotations further shortly.

**GROUND WOOD.** A little easier tone has developed in ground wood and sales have been recorded at what represents slight declines in prices. Spruce ground wood of prime quality has been sold in some cases down to \$130 a ton at grinding mills, and there have been reports of offerings in out of the way instances at as low as \$125. The reason for this change in complexion of the market is said to be the anxiety of certain producers to dispose of small tonnages of pulp rather than to hold it at the high prices recently ruling. Grinders as a general thing have but light stocks on hand and most of them are not the least nervous over the outlook, it being the common opinion that mechanical wood pulp will be in strong demand once the summer period of dullness is past. There is consequently no great amount of selling pressure in evidence although some factors have weakened the market to an extent by unloading some supplies.

**CHEMICAL PULP.**—Quotations on chemical wood pulps are maintained and there is a lack of important feature in the market other than that arrivals of pulp from Scandinavia have increased to an extent. Steamers from Norway and Sweden with pulp in their cargoes have reached New York and other Atlantic ports during the past few days with comparative frequency, and judging from their manifests receipts of sulphite from these sources have been probably larger than in any similar period since prior to the war. Importers say, however, that practically all of this supply is on contract, and that, aside from putting some paper manufacturers in a position where they can afford to refrain from buying domestic pulps for a time, the effect on the market here is negligible. Prices on domestic grades rule steady, and there are no signs of supplies becoming freer.

Arrivals of foreign pulp at New York during the week include 9,400 bales from Hallstavik, 1,466 bales from Gothenburg, 10,522 bales from Christiania, and 2,990 bales from Trieste.

**RAGS.**—The rag market is characterized by a steady undertone and in respect to some grades, whites in particular, there is a strong advancing tendency apparent. Evidently paper mills are still experiencing difficulty in obtaining all the bleaching materials needed and are therefore buying proportionately larger quantities of white than colored rags, resulting in a keen demand for the former. New No. 1 white shirt cuttings have sold at better than 25 cents a pound at shipping points, and indications are that the advance in this grade has not yet spent its force. Old No. 1 repacked whites are bringing 14 cents and more, while new unbleached muslin cuttings are held at 19 cents, white lawns at 21 cents and No. 1 washables at 12 cents. Roofing rags are quite unchanged at a basis of around 2.25 cents for No. 1 packing, and there is little or no alteration in the situation for thirds and blues, which are freely available to consumers at 4.50 cents at shipping points. Chief strength lies in the new rag end of the market and dealers lay much stress on the difficulty they encounter in replenishing stocks of such rags.

Receipts of foreign rags at New York this week include 95 bales from Antwerp, 38 bales from Trieste, 88 bales from Rotterdam, and 204 from Hamburg.

**PAPER STOCK.**—Waste paper prices continue to rise and business has been recorded during the past several days at new record levels. Folded newspapers lead in demand at present and this grade of old paper is selling at as much as 2.75 cents a pound f.o.b. New York. Mixed paper is firm at around 2.15 to 2.20 cents, and there is a ready demand for kraft and shavings. No. 1 hard white shavings readily command from 9 cents upward, with some transactions reported up to 9.50 cents, while soft white shavings of No. 1 quality are bringing 8 to 8.25 cents at shipping points. The only quiet spot in the market is in flat stock. Book mills are buying rather sparsely and old books and magazines are obtainable at relatively low prices, No. 1 packing of heavy books being freely available at 3.25 cents.

**OLD ROPE AND BAGGING.**—There is a slack demand for old bagging and offerings of No. 1 stock at 2.50 cents are mostly going unaccepted by mills. Old rope is moving in moderate amounts at a price basis of around 6.25 cents for No. 1 Manila rope.

Arrivals of foreign material at New York this week

include 220 bales of bagging from Antwerp and 50 bales from Calcutta, and 116 bales of rope from Gothenburg and 66 bales from Trieste.

### THE MARKET FOR CHEMICALS AND FEEDS.

**Alum.**—Bauxite is still very scarce, because of ear shortage. The small amounts of alum available are assigned to water works by priority.

**Salt Cake.**—Utah is offering this material at a price equivalent to \$45.00 net ton Montreal delivery. Saskatchewan has sodium sulphate in crystal form, but freight costs make shipment prohibitive unless some means of drying at low cost be devised.

**Soda Ash** is slightly weaker in N. Y., but the Canadian market is well sold up. It is understood that the output from Amherstberg is to be increased and this may be available before the end of the year.

**Bleaching Powder.**—Is still very firm, the market even getting tighter; 8 cents a pound has been asked for spot at New York. Demand is very high and transportation situation still very difficult.

**Salt cake, soda ash, and caustic soda** depend on the output of muriatic acid, and this commodity is held back by attitude of miners, and the large use of gray salt. The decrease in use of gray salt for ice cream may ease the situation slightly.

**Hay.**—Ontario, Quebec and Eastern States have good crops which are not being moved very well owing to lack of help and transportation. \$30.00 to \$31.00 on earloads is the present quotation in Toronto, but indications are that the price will be a little lower when crop is made available. It is understood that the farmer will stand the increase in freight as the market should be rather easy.

The general feed situation is about the same as last month except that the new freight rates increase flour by about 25 cents per bbl. All feeds are thus affected to the extent of about \$2.40 per ton.

### CHAMBER OF COMMERCE AT PARIS HAS ACTIVE CANADIAN SECTION.

Among British Chambers of Commerce established abroad, that of Paris is conspicuous for its enterprise in serving the requirements of British Trade and Industry, and, furthermore, possesses a very active Canadian Section.

The Committee of this Section is composed of persons themselves interested in trade with Canada, and consequently is in a position to supply all the requirements of Canadian Members. The membership of the Chamber is restricted to firms of British nationality, it receives no subsidy from the Canadian or British Governments, and carries on its most necessary work entirely through the subscriptions of its members. To enable the Chamber to take up a firm position and thus sufficiently combat foreign competition, it very naturally deserves to continue to add to its membership.

Among other things it puts its members into touch with suitable agents in France, obtains information on the Commercial standing of French firms, supplies exact Customs classification of goods, notifies changes in French Customs duties and proposed commercial legislation, communicates enquiries from French buyers of British goods and, furthermore, publishes a very useful Bulletin of information.

Applications for membership should be made to the Secretary of the Canadian Section, British Chamber of Commerce, Incorporated, 6, rue Halévy, Paris.



TRADE-MARK  
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SOLE AGENTS in the United States, Canada, Mexico and Cuba for  
**Finnish Cellulose Association, Helsingfors, Finland**

comprising all and every Sulphite, Sulphate and Kraft pulp mill in Finland, Manufacturers of superior grades of Bleached and Unbleached Sulphites, Easy Bleaching Sulphates and Kraft Pulps.

—ALSO—



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SOLE AGENTS in the United States, Canada, Mexico and Cuba for  
**Finnish Wood Pulp Union, Helsingfors, Finland**

a combination of the foremost Ground Wood Pulp and Board Mills in Finland, makers of various kinds of boards and dry and wet Brown and White Mechanical Wood Pulp.

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Telephone: Murray Hill 4246-47  
 " " " 2170

INQUIRIES SOLICITED.

### THE PULPWOOD INDUSTRY OF GASPE.

"Old Subscriber" thus addresses the Montreal Star:—

Every time one picks up his newspaper the costs of newsprint is brought to his notice, his daily paper costs more and more, and a workingman cannot understand why this should be. There are large areas of pulpwood in Gaspé, a United States company with headquarters at New York, is doing an extensive business cutting the wood and shipping it on steamers to some part of the State of Maine where are large paper mills and it is put in the finished state. This firm ships over 200,000 cords of pulpwood yearly. This wood is easily attainable as most of it is floated right to the mill wharf with very little expense. This firm employs a very few men, and it pays the lowest wages for labor; also this firm will pay only \$6 to \$6.50 per cord of 142 feet, not under 5 inches top, placed on the river bank, to local people for pulpwood from the people's own land, but the bad feature of this industry in Gaspé is that the Government do not make this company build a paper mill here, if they want to use our raw material, where they could put this wood into a finished product right here in Canada, and give employment to a large number of men. There is lots of surplus labor in this district and it would keep the population from moving to large cities, and would leave money in the country which otherwise goes to the U. S. A. I do not believe in organized labor as a rule, but it would most certainly improve the workingman's lot at Gaspé.

### MANITOBA PULPWOOD LOCKED UP.

Lack of transportation facilities is the only hindrance to the development of a good pulp industry in north-eastern Manitoba, according to F. K. Herchner, inspector of Dominion forest reserves, who returned last Friday from a six weeks' inspection trip through the district between Norway House and Brassy Hill, about 100 miles from Hudson Bay. Mr. Herchner said the supplying of transportation facilities was a problem for the future.

To quote the Winnipeg Free Press:—"The timber along the Hayes river, as far north as Swamp Lake, is of a good hard quality, and in some places I found spruce 24 to 26 inches in diameter. Owing to the rapids, river transportation on a large scale is out of the question however, and travel is done entirely by canoe," Mr. Herchner said. "Most of the timber cut

is used for fuel, and the very small quantity of lumber needed by the few settlers is whipsawn. The only saw mill in the district is owned by the Roman Catholic mission at Cross Lake.

"Very little timber has been destroyed by fire this summer, in spite of the unusually dry condition of the bush. Although a number of small fires have sprung up, they have been quickly checked, and the fire ranger at Norway house has had his men on the alert, following up campers and putting up caution signs in many places. Twenty-two Indian patrols are employed in this district alone, covering the area between the Black River and the east shore of Lake Winnipeg and Nelson river and the Ontario border. Many of the fires in this part of the country were caused by lightning," Mr. Herchner said.

### BEHIND IN COAL.

Writing in the United States Paper Maker, "C.F. M." says:

Whatever the cause, the fact remains that the railroads are far behind in their coal deliveries; so far behind, indeed, that there is little hope for them to catch up this year. When winter comes on the railroads will find themselves busy keeping the houses warm and supplying public utilities; and the industries will simply have to run on short time, if at all. That situation may tremendously reduce the supply of paper; it may also correspondingly reduce demand, though I do not think the effect will be so noticeable in that direction. Certainly it will do nothing to help us catch up.

Is there profiteering in paper? Well, I would not say it is as bad as that. Generally speaking, I believe the mills are reasonable. The fabulous prices we hear talked of apply to a very small percentage of the total production. The great bulk of all the paper now being made is sold at a fair price. Of course some fancy prices are obtained by "speculators on the sidewalk"; and it is intimated that here and there we find a mill sold for six months ahead that can nevertheless dig up a few pounds for immediate delivery to the highest bidder. And there is always some high bidder at hand.

But we must not forget some of the mills have experienced many lean years. Now that they have the opportunity it is not surprising that they are inclined to pass their plates for a second helping. After all, paper makers are mostly human; some of them generously human. Take them as a class, I like them.

## Scandinavian American Trading Co.

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1813

NEW YORK

We buy all kinds  
of Canadian

# WOOD PULP

AT TOP PRICES.  
Write us and be  
Convinced.

# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., Sept. 23rd, 1920.

No. 39

## TABLE OF CONTENTS

### Editorial :

Red .....	989
Is it a wild-cat ? .....	989
Please pass us a railway .....	990

### Special Articles.

Agitators as Advertisers .....	991
Mould growths on woodpulp .....	995
Imperial Forestry Resolutions .....	999

### Miscellaneous Information.

Dragging Down Pulpwood Safely .....	993
Pulpwood from Labrador .....	994
Industrial Co-operation .....	998

### The use of Sulphur and Sand in sewer pipe joints .....

.....	998
-------	-----

Economic loss due to strikes .....	998
------------------------------------	-----

### The Markets.

Canadian Trade Conditions .....	1008
New York Markets .....	1010
Pulp Sampling Tool .....	1001
Putting tight belt on Pulley with a rope .....	1002
Review of recent literature .....	1004

Book Review—A Manual of the Timbers of of the World, Their Characteristics and Uses .....	1007
---	------

### News of the Industry.

Pulp and paper compared with other exports .....	996
Belgian paper industry recovering .....	997
Semi annual report of Laurentide .....	1000
British Trade Notelets .....	1001
New bleach plant at Lincoln mills .....	1001
The Print Paper Situation .....	1002
Tractors for Great Northern .....	1002
Worshipped in Paper Mill .....	1012
Baseball in the St. Maurice Valley .....	1002
Supplies from Finland .....	1002
Newspapers cost less than newspaper .....	1002
New wage scale in England .....	1003
Pulp and Paper News .....	1006
Holloway to manage Hammer Mill Wood- lands .....	1007
May cut B. C. Pulpwood Fees in Half .....	1012
Killed at Rimouski pulp mill .....	1012

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# FAIRBANKS-MORSE



## Speeding-up the Nation's Production

**T**O meet the nation's insistent call for greater production—production to bridge the gap caused by the long period of hostilities during which our every effort was concentrated on winning the war, the entire Canadian Fairbanks-Morse organization is again bending every effort, exerting its full strength to serve Canada and Canadians.

Here is a Canadian institution backed by a Dominion-wide distributing organization, its branch houses extending across the country, giving a new conception of service to manufacturer, farmer, fisherman—to every branch of industrial activity. Here is an institution which is a dominating factor in Canada, whose name has become the synonym of quality and whose service is recognized in every branch of business where mechanical goods are used.

Our 100% quality mark is the outward symbol of all that this organization stands for. This seal not only marks the standard of quality of Fairbanks-Morse goods, but it represents the ideals of the organization and of the men whose service and advice are yours.

Everything mechanical for factory, mill, farm or motorist and everything backed by 100% mark of quality.

Ask our nearest branch house for information about anything mechanical.

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# EDITORIAL



## RED.

Perhaps the one topic that has been most before the public through the press of the United States and Canada during the past week has been the explosion that occurred in front of the United States sub-treasury building and the offices of J. P. Morgan and Co., in New York. A great many opinions have naturally been formed and expressed on the subject and the best detectives on the continent are busy with the investigation. There is considerable inclination to consider that the work of the Red element is at the bottom of this outrage. The United States has already taken a strong stand with regard to such alien enemies who unfortunately are only too often encouraged by the so-called free thinkers, advanced socialists, etc., among influential citizens.

Whether or not the New York affair was a Bolshevik outbreak, there is no doubt but that there is a great deal too much propaganda going about unanswering and unchecked which is intended to arouse suspicion, distrust and unrest among the people of Canada and the United States. The difficulty is doubtless in considerable part due to the failure to acquaint the new comer, and particularly the illiterate new comer, in the duties and obligations of Canadian and American citizenship. An illiteracy test of a very elementary character is applied to the immigrant but practically nothing is done to provide for or to encourage further educational effort. Thus, the immigrant is naturally influenced most by the first smooth talker who comes along and arouses his enthusiasm. It is probable that in most cases the workman who comes over here from Europe or elsewhere would have been well satisfied to make normal progress and to advance into a position of comparative wealth and comfort—great in some cases by comparison with former conditions—were he permitted to make progress according to his own ability and ambition and not interfered with. There are however, too many agitators who make their easy living by stirring up such people to false ideas of grievance and injustice and it is now certainly time for something very definite to be undertaken to counteract the work already done and to inoculate those who have not been poisoned against such propaganda, which in spite of its name it really most anti-social. On another page is a quotation from a speech delivered almost a year ago that bears very directly on the subject of the activities

of the radical element among labor. Until nationwide, united effort is made along the lines suggested by Mr. Webb it is incumbent upon every good citizen who has a voice or a pen to use it in the interest of good citizenship.

That organized labor in Canada is thoroughly awake to the danger of an active and unopposed Red element and to the obligation that Trade Unionism along with other such organizations is under to preserve order and stability in the country is well shown by the fine note that ran through the meetings last week at Windsor, Ontario.

If less effort was wasted by both laboring men and employees in fighting each other and this energy blended into a well organized and enthusiastic campaign for good citizenship and the best possible conditions of living and labor there would be practically no need to fear such events as transpired in New York. There will be no need and no support for them.

## IS IT A WILD CAT?

In the Pulp and Paper Magazine last week notice was given of the incorporation of a new pulp and paper company together with a description of their limits, list of officers, etc. It has been mentioned that some rather extravagant statements were given in the prospectus which the company issued and consequently the proposition is looked upon by some of the more conservative financial houses as a wildcat scheme. For instance, there are not many areas in Canada that would average ten cords to the acre and it seems also that the company has figured this stand as being available on the very considerable area of water included in the limits. Furthermore it seems that some of the cruisers have included in their estimate trees down to four inches on the stump. The revised timber regulations of Quebec place a minimum diameter for spruce pulpwood at 12 inches except for certain swamp types where seven inch wood may be cut. No mention is made of the existence of any burned areas, extensive windfalls or dead timber due to the ravages of insects, fungus or frost, apparently all standing trees over four inches in diameter having been counted as pulpwood.

The most extravagant statement however, is the estimate of profits. The Financial Post of last week jumps, with both feet as it were, on the statement of the promoters that they can make groundwood for \$19.50 or less and sell it on a two year contract for

\$150 per ton. The Post presents it this way as a simple problem in arithmetic:

$$150 - 19.50 = 130.50.$$

$$130.50 \times 15,000 = 1,957,500.$$

Just like that!

Which, being interpreted, is:

The Lake St. John Pulp and Paper Co. have discovered a means of manufacturing groundwood pulp these days for \$19.50 a ton. And they can sell it for \$150 a ton! Or, 517 per cent. profit! And on two years' contract at that, so see how sure it all is—those profits.

There are others besides the Financial Post who would like to see those contracts or to meet a few large consumers of groundwood who are as eager as that to cover requirements for two years or even less.

The limits of the company and their water-powers are doubtless located according to their map. The amount of water power has been inspected, to some extent at least, by provincial authorities and according to the statement of Mr. F. T. Kaelin made in 1915, the river mentioned in the prospectus has available eleven thousand H.P. The statement regarding fire protection appears correct and certainly the existence of the St. Maurice Protective Association is one of the greatest assets of the pulp and paper companies of Quebec, but we don't find the predecessor of the new company among the members.

It is in connection with new propositions of this kind that there is the greatest opportunity for misrepresentation and the greatest need for investors to go carefully and weigh all of the factors. On the other hand is the opportunity, if the proposition is sound, to assist in building up the industry, and some one must make a beginning. The success and soundness is largely a matter of the experience and integrity of the men behind the proposition. In this case the editor is not acquainted with anyone connected with the new company and therefore has no opinion whatever to express, but as readers have often noted on these pages, we want to see everybody have a fair chance to get a good start with an honest proposition.

#### PLEASE PASS US A RAILWAY.

A railway is just what is needed to open up the resources of north Frontenac. There is an area from one to three miles covered with maple, hemlock and basswood that has never been cut, while the lakes are teeming with fish, twenty five pound salmon being the ordinary catch. As a county man, he states, these things will be presented to the railway board when the application is made for a branch line to the feldspar mines.

So we read in the Kingston, Ont. "Whig" regarding the wants of north Frontenac county as expressed by

a "county-man". It sounds as if he spoke as one asking for a pound of butter because he had a slice of bread. Railroading has apparently changed from the time when a man like John R. Booth, or a concern, having material to dispose of, built their own road and by enterprise and industry made it pay. Is the little patch of wood, which might engage lumbermen a couple of years, all there is for the railroad? Would a road open an agricultural area for which there is an urgent demand or should it be left to grow forest? In this case a light logging track or even a tractor road might be better. What would the gentleman say if we were speaking as provincial or federal man?

#### COBWEBS.

Advance proof of the 1921 Safety Calendar of the National Safety Council has come to light. It is a dandy. Another case of laugh and learn.

From the pictures in the last number of the "Brown Bulletin," the Brown Corporation has selected a beautiful spot for its forest nurseries at Cusuptie Lake.

While magazines are calling attention to the difficulty they have in getting paper, an American periodical last week carried a full page advertisement in a Montreal paper.

Of the 40,345 acres of timber lands in the St. Maurice Protective Association area in 1919, 34,170 acres were cut over or old burns. Almost half the total being cut-over land. What was wrong with the cutting?

Gee whizz! We had to pay **seven cents** for a Montreal Gazette on the train. The street price is five cents. We admire the publisher's courage to charge what his paper is worth. It was worth seven cents, so there is no kick coming.

Present paper prices in Britain do not indicate immediate imports in quantity to Canada. We have recently seen the following quotations per pound: M.F. or S.C. Printing (book), 8d.; Imitation Art, 9d.; Vegetable Parchment, 1s. 7½d.; Write Printing (extra quality), 10½d. These are very nice papers, but at 8d. plus 25s. for export packing and about £1 per ton freight, the market will have to be a bit lighter before much business is done.

Fears that the pulp lands of Ontario have about reached the vanishing point are dispelled by the news that a few thousand acres more have been found and turned over to United States paper interests.

—Barrie, Ont. "Advance".

## Agitators as Advertisers\*

I attended a dinner of The Sphinx Club, given at the Waldorf, in New York, two weeks ago last night. This was the 163rd Sphinx Club Dinner in something like twenty-three years; and since the Sphinx Club functions very largely through dinners, it may be considered something of an expert on giving dinners and in the selection of after dinner speakers.

The third speaker was Mr. Sherman Rogers, who appears to be something of a free lance on labor; and who opened his remarks by a statement that he felt out of place, the tuxedo which he stated he wore for the first time that night apparently completing his discomfort.

Rogers had the large knuckles of a man who has worked hard with his hands. And his face, from time to time as he talked, fairly writhed with the intensity of his feelings and his efforts to express them. But he gave the key-note to his views on the labor situation by expressing his opinion that when the railway men, to use his words, went to Washington two years ago and, figuratively, presented a pistol to the head of the Government,—saying, "We demand this and that, or we'll strike," they should have been told to strike.

Rogers stated his convictions that a great deal of preventable trouble originated right there, and has been going on and growing ever since through radicals having obtained at that time a false idea of what they can really do.

Rogers began then to outline his own experiences as a laboring man, first—going into what happened to him among the lumber camps in the Pacific northwest just previous to the Seattle strike, at which time he was foreman of a gang of lumber jacks. "These men," he said, "are mostly I.W.W.'s now, but as fine a bunch of men at heart as ever drew the breath of life. They were thoroughly contented and happy; better off with the six dollars a day they were making than ever before in their lives. Then suddenly," he said, "the whole situation changed—in a night. A band of agitators swept through the country and the next morning the men were out of hand." He questioned his own particular gang, "What is the matter with you," he asked, "Aren't you satisfied, aren't you making big wages?" "Yes," they sneered back, "we are, we are making six dollars a day; and the Lumber Companies are making Sixty Dollars a day out of each one of us." There was no holding them. They went down to Seattle and took part in the strike.

"This statement," Rogers said, "that the Lumber Companies were making Sixty to One Hundred Dollars a day per man out of its workers was untrue. They were actually on the verge of bankruptcy, but the men did not know this. They had been told to the contrary, and they believed it." No effort was made, apparently, to set them right.

In Chicago, before the stock yard strike; in Pennsylvania, before the steel strike; in New York, along the waterfront; wherever he has been and had the opportunity to investigate, according to Rogers, the same general type of statements are made to the workers, "Yes, you are making so much; but your employers are making ten times as much per day out of your efforts."

These statements, he claims, have invariably been untrue, but he makes the point that a lie is as bad as the truth **if the men believe it.** He states, too, that literally tons of literature in their own language is going into the homes of these men preaching the same false doctrine—with never a word of the truth finding its way to them. The public is apathetic and indifferent. The American Federation of Labor, with the rank and file sound at heart, seems scarcely more alert.

Two to five per cent. of rotten apples are ruining the whole barrel. He quoted Foster and other labor agitators time and again from their various published utterances, in which they urged the I.W.W. and the direct-action groups, to sink their own identity, to disintegrate, **but to join the American Federation of Labor and smash it from within.**

The Literary Digest for October 25th, quotes Sherman Rogers from the New York World as follows:

"Approximately 300 strikes are now in effect in the United States and Canada. The most peculiar phase of the situation is the fact that nine-tenths of the present strikes are outlaw walkouts, and as a result, the conservative leaders of The American Federation of Labor are greatly concerned over their loss of authority.

Mr. Rogers summarizes the results of his investigation as follows:

One—The present unrest is not caused by economic disturbances.

Two—Working men, generally speaking, are saving more money than at any time in the period of American history. And in proportion to the cost of living, are receiving the highest wages ever paid in this country.

Three—Nine-tenths of the present epidemic of strikes is the result of a wide-spread campaign, headed by a skillfully conducted, methodically organized body of revolutionary leaders, whose sole object is the disruption of the present social system. Their campaign of slanderous misrepresentation, intended to cause suspicion and class hatred, is being vigorously waged throughout every city, village and hamlet in the United States.

Four—Conditions will rapidly regain normalcy as soon as there is a concerted movement among loyal Americans to acquaint working men with the truth in the same manner that the radicals reach them with gross misrepresentation."

Apparently, the American Federation of Labor is largely like the public, and is being swept along by the radical five, or four, or three per cent. or less, which is rapidly gaining control; which, in fact, has already apparently gained control to such an extent that the leaders can no longer govern their men, and are yielding to radicalism more and more in the effort to hold what influence they still have.

All the while nothing is being done to meet the **advertising drive** of radical agitators, to save decent labor as well as ourselves, from what they are driving us towards.

A lot of us, apparently have felt that this thing is a disease; that the country is sick; that there isn't anything special that we can do about it; that we must just wait until the country gets over it.

As I listened to this speaker at the Sphinx Club

\*Extract from an address before the Advertising Club of Baltimore, October 29, 1919, by Frank D. Webb, Advertising Manager of The Baltimore News.

Dinner, however, I came more and more to believe that this thing isn't a disease except to the extent that a very small, noisy, poisonous minority of men, who gain—and expect to gain more by it—are vigorously engaged in spreading disease germs.

They are using advertising for this purpose, very bad advertising, because it is generally untrue. But it is getting results and we are letting them get away with it. Instead of letting them make money out of it, because they are so successful—let's see that they don't make money out of it because they are so unsuccessful. Instead of its being an occupation paying better than any possible honest work could pay, let us educate the masses of American Labor through advertising until this business of being an agitator becomes one of extreme peril at the hands of the would-be dupes; alongside of which, almost any honest occupation, no matter how moderate its pay, will look good by comparison.

Rogers mentioned a number of Cleveland firms, in which locality there has been a good deal of labor trouble, and which banded together for the purpose of putting the facts before their employees. This group included among others, I believe, The Hydraulic Pressed Steel Company. Instead of hand-picking their labor and keeping those out who were apt to make trouble—they invited them in. The more radical they were, the more the companies wanted them. And free speech and meetings were encouraged. The only stipulation being that, whenever such meetings were held, the plant manager, statistician or owner, or some such authority, was on hand to speak at the same time agitators spoke and to see that the men got facts. Not a strike, according to Rogers, has taken place in a single one of the plants in this association since that time. And even in the steel strike, employees of the Hydraulic Pressed Steel Company did not go out. Strikers marched down past the plant with a brass band at their head, but not a man left his bench.

In expressing his confidence that the great masses of the men are honest at heart, Rogers says that he has even had several talks with Big Bill Haywood and believes that he has almost converted him, simply by proving facts Haywood heretofore doubted.

If this man is anywhere near right, let us go in the game too. If the truth put squarely before them will get the results he feels it will, and there are other incidents, from other sources, which would seem to prove the same thing, for the love of Heaven let us give them the truth.

Sherman Rogers spoke of one strike which was called in which he heard the grievances of the employees and the answer of the employers, who are stating these facts to the strike leaders. "Why don't you tell the men those things?" he asked. "The leaders are paid to call strikes and to win strikes—not to call them off. You are telling your facts where they can do no possible good."

The Rev. H. P. Molyneux, Pastor of St. Brendan's Catholic Church, Braddock, Pa., is quoted by Iron Age as having said in the course of a sermon several weeks ago, that the Steel Strike is not being brought about by intelligent or English speaking workmen, but by men who have no interest in the community and who do not have the welfare of the men at heart. He said that in the previous two weeks he had talked with at least two hundred millworkers with regard to the strike, all intelligent English speaking workmen, some

from his own parish, some from outside. "I could not find one instance," he said, "where the men wanted to go out on strike. They all stated positively and clearly on the other hand, that they were well treated and satisfied with conditions."

"There is one thing I have noticed about these strike leaders," continued Father Molyneux, "and that is that with very few exceptions they never had on a workman's blouse in their lives, never went into a mill in a pair of overalls. These men were never seen with the honest sweat of toil on their brows, the tan brown is not on their hands. They are a lot of smooth oily-tongued talkers with a kind of sympathetic whine appealing to you. They are royal gentlemen of leisure, they always wear fine clothes. A strike should be the last resort for redress of a grievance and all other means should be exhausted before men resort to a strike."

The point is, those strike agitators make money out of it. Therefore, the folly of the men who argue, "Let's fight this thing out right now and settle it once and for all." This is the strike agitators' business and we don't settle them once and for all. They will keep at it as long as they make money out of it.

Let's advertise so well that the strike agitators, who come into a community, will run up against working men who know the truth in advance of their coming. Let's do the work so thoroughly that in time we won't be put in the position of having to answer lies, but will have told the truth to labor so well that they will detect the lies when they hear them first recited. And crooked agitators when that state of affairs comes to pass, will address falsehoods to enlighten working men in peril of their lives. Let a few of them get beaten to a jelly by men angry at being lied to. Let a few of them get the medicine which is now administered by strikers to decent men, only asking to be let alone and allowed to go on with their work, and strikes won't be so popular and strike leading so popular and lucrative a calling.

John T. Frey, Executive Officer of the International Moulders' Union, and Editor of its official journal, tells an absorbingly interesting story in November Metropolitan on what can be done merely through employers and employees getting together.

Every movement of that sort is worth while, and the proper sort of foundation on which to build advertising. Firms should know the address of every employee, the language spoken in each home, the personnel of every family group, etc., so that just as the radicals—the I.W.W. and the various direct action groups, appeal to them with radicalism, with false doctrines, etc. in their own tongue, we can appeal to them with the truth in their own tongue.

If a strike is threatened, and we have gotten in possession of all the facts—not merely the surface bunk which the agitators put out to influence public opinion

—but the real thing with which the agitators are filling the minds of the most ignorant, is the strike so likely to be called do you think if in addition to full page statements of all the facts in newspapers, appeals based on the facts are directed at the women in the homes in their own language? Put the justice of the situation up to them. Will they stand for the misery and discomfort to them of an unjust strike, or one that can be avoided? Hardly. The strike agitator will go up against the balance wheel, if we can get the truth to the women, which will make his efforts four times as difficult.

"But this plan is too much trouble—or too expensive."

Is it a patching to the trouble, the mounting expense of everything that comes into our daily lives, the largest single factor in which is steadily decreasing production? Is anything too much to undertake to avert the downright desperate danger into which we are so steadily running and at such high speed? At that, the trouble and expense isn't greater than that met and surmounted daily by the average well organized advertising department of any large concern.

This is simply a new advertising proposition, or rather a slightly varied phase of the same old one. We want to sell our own proposition to our own forces. We have been so busy selling it to everybody else that we haven't bothered with our own employees. Let's tell the truth to both public and employees at the same time.

There is an opportunity for everyone of us in this drive as individuals and organizations. Any trouble any of us see developing in our own various industries, at any time when it is no bigger than a man's hand, we should immediately investigate, at the earliest possible moment bringing advertising to bear on the situation. At the same time we should report it to the Club, so that the organization can work to prevent growth by removing cause.

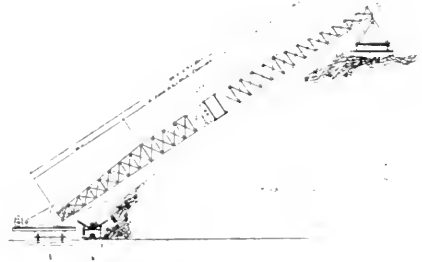
Strikes are the fashion everywhere; men strike for anything. In some localities they strike first and announce what they're striking for afterwards. Let's substitute real advertising for the advertising medium of the strike. In sixty to ninety days, if we do our part, and spread this idea broadcast at the same time as no one should know better how than advertising men, the whole face of things should change. A new idea could be driven into the heads of American people.

It should be possible to kill the idea that strikes are the only possible way of getting differences adjusted in less time than that, and with the various communities all over the country thinking peace instead of internal war, as at present with a spirit of "get-together", instead of "fight-it-out," universally abroad in the land, calling these big stand-and-deliver monstrosities would be impossible because the great mass of labor would have been won from false radicals and instead of following blindly towards ruin for themselves and everyone concerned, would be fighting to achieve the wonderful possibilities which are now open before this country as never before in the history of the world—if we can once get together. And with advertising we can get together.

#### DRAGGING DOWN PULPWOOD PILES SAFELY.

A device recently perfected and which bids fair to revolutionize the handling of the wood from storage at the pulp and paper mills is a reclaimer being marketed by the Canadian Reclaimers, Limited, of Toronto, which has just been organized with Mr. R. W. McKenzie, formerly of the research department of the Abitibi mills as President and Managing Director. The reclaimer picks off the pulpwood blocks from the storage piles and when it is stated that the machine is capable of delivering 40 cords per hour into the conveyor, its value as a labor saving device can be readily seen. The main principle in the designing of the reclaimer was to retain the angle of repose of the pile, so that the blocks would come into the conveyor as needed. Accomplishing this, the machine was de-

signed with a bottom carriage running on a portable track on the ground. Connected to this carriage is a boom lying at approximately the angle of repose of the pile with its upper end resting on the crest of the pile on a small truck. This boom, by means of idlers, carries chains which drag down the slope of the pile and which pull the blocks into a portable conveyor at the base of the pile. The chains have pointed attachments set at such an angle that they will engage the wood and start it in motion. The sage in the chains makes it possible to dig a swath from 4 feet to 8 feet in depth into the storage pile. After the chains have dug to their capacity, the reclaimer is moved laterally



along the pile and the dragging continued until the full length of the pile has been covered. The boom is then shortened and the machine is moved back along the pile, dragging as it goes. By thus taking the wood from the face of the pile rather than from the bottom, it accomplishes the systematic handling of the blocks. It also eliminates the dangers due to slides which are a serious problem when the angle of repose of the pile is broken.

The reclaimer promises to fill a long felt want in pulp and paper mills and roasting mills where they have no stackers, for when put in use as a stacker, it is built up as it makes the pile. By the time the wood is all stored in the fall, the machine is in place to be used as a reclaimer. When used to stack wood it again cuts the cost considerably over some of the present methods of operating. It is claimed by the promoters that there is no other machine in the market that takes the wood from the pile and that there is a big field for the machine both in Canada and the United States where it is proposed to operate. As yet the machines are being constructed under contracts with other firms but later on the company plans to manufacture its own product throughout. Others associated with Mr. McKenzie in the enterprise are W. C. Soubliere, T. Linsay Crossley, E. A. Kemp, A. E. Marks and W. J. Boyd, the latter three prominent financial and business men in Toronto. The company has an authorized capital of \$50,000.

It is gratifying to note that, in connection with their agreement between the city of Fort William and the Fort William Pulp Co. there is a clause relating to labor conditions which has been thoroughly discussed in public and fully approved by the citizens. Nothing like a good understanding at the start

"A careless man is shortsighted," says the Safety League.

### PULPWOOD FROM LABRADOR.

To a person who is familiar with the northern extension of our Atlantic coast which goes by the name of Labrador, it is always amazing to discover the misconceptions concerning that region, which exist, almost without exception, in the minds even of educated and otherwise well-informed persons. The words "lonely", "remote", "desolate" seem to picture the qualities which the mention of Labrador unfailingly calls to mind, while the association with icebergs and an occasional seal imply an immediate juxtaposition to the North Pole. It follows, therefore, that one is usually met with an incredulous smile when he states the fact that Labrador lies between almost exactly the same parallels of latitude on this side of the Atlantic which the British Isles occupy on the other, and that for all the ignorance which exists concerning it, the coast is literally just around the corner from us—much nearer the northeastern extremity of the United States than Alaska is the northwestern.

Climatically Labrador is divided into two regions, the coast and the interior. The former is a few miles wide and is Arctic in character, the latter is a few hundred miles wide and is what one would expect to find in the fifties of north latitude; that is to say, it is well watered, densely forested and quite similar in character to the North Woods, hot in summer and cold in winter. This amazing disparity in climate between two regions so close together is due entirely to the fact that the polar current, setting southward out of Davis Strait, prevents the seaboard from ever growing warm. There is floe ice along shore until late in the spring and there are bergs, though not in sufficient numbers to be a serious menace to navigation, all summer long; and the temperature of the sea water rarely gets far above 32 degrees. Thus, it is the Arctic condition of the coast which is abnormal, if one may use that word of an established natural condition, and it is the north temperate climate and flora of the great interior which is "normal" and as it should be; but the sea coast forbidding aspect has so long been synonymous for Labrador that it is hard for any one to believe that there can be anything but barren tundra behind.

I shall never forget my own surprise at my first glimpse of the hinterland. We had been for days skirting the coast in one of Dr. Grenfell's hospital launches and had seen nothing but ice and bare rock—not a bush or a blade of grass. At last we swung west around a great headland and started threading our way up a narrow defile between immense hills of a blackish rock. After about a half hour's steaming we came upon a little clump of dwarfed tamarack nestling in a hollow. Then suddenly the vessel turned a sharp corner and we came out abruptly upon the waters of a beautiful big lake, surrounded by gently rolling hills covered to the water's edge by a forest of spruce and tamarack so dense that one could see scarcely ten feet back into it. The air here was warm and the sky overhead blue, we felt as though transported back by some magic to the shores of an Adirondack lake. Yet this was all deep water, easily navigable by the largest ship. Perhaps half a dozen white men at most had ever seen it before us.

This description will fit, with modifications as to distance, the head of almost any one of a nearly innumerable series of inlets and fjords, for the coast is very much indented and looks on the chart almost like the fringe of a rug. Hamilton Inlet penetrates the

farthest—nearly 150 miles straight back from a line drawn across the outlying headlands—and its inner half, Lake Nelville, is a veritable inland sea of about the size and shape of Long Island Sound. When I last visited this water its shores were strewn with quantities of saw logs from a raft which had broken up in a storm. This was the aftermath of the efforts of a half-baked Nova Scotia concern, it lacked the equipment to collect the logs, and it did not long survive their loss.

More recently, however, the knowledge that there is behind that forbidding, desolate coast an almost limitless supply of readily accessible wood has begun to attract interest for purposes other than lumbering. Pulp wood is every year more greatly in demand and more difficult to secure. Moreover, timber which is not sufficiently tall or heavy for profitable lumbering is commercially valuable for pulp wood. In many cases this has resulted in denuding forests of their young growth. Labrador is probably the one place on earth where this would do no harm, unless it be to an occasional spruce hen. The country is singularly devoid of game.

The timber consists chiefly, almost entirely in fact, of spruce (*Picea nigra*) and tamarack (*Larix americana*). In size it runs from a few inches to two feet in diameter at the butt. The farther inland one penetrates the larger the timber grows, but my personal observation has been that two feet is about the limit, except for occasional trees. It grows most abundantly around the heads of inlets and along stream courses. The higher hills are bare, as are likewise considerable stretches of elevated plateau.

Roughly speaking, the northern limit of the timber is in about 57 degrees north latitude. At least I have seen none to the northward of this at a distance some fifteen or twenty miles back from the coast, though at Davis Inlet in 55 deg. 5' it is abundant. This means that there is a belt of timberland some 400 miles long north and south, which is immediately accessible by navigable waterways which is immediately accessible by navigable waterways to an average depth of perhaps 30 miles, without counting the great interior basin of Hamilton Inlet. The timber is suitable for pulp wood and is of little or no value for any other purpose.

A pulp wood enterprise has already been undertaken upon the Alexis River, on the southern portion of the coast, not far from Dr. Grenfell's hospital and mission post at Battle Harbor. Others will doubtless follow and it may be that the inundation of the "lonely Labrador" by foreign workers is just around the corner of the future if given adequate means and knowledge.

-J. T. Rowland in "Scientific American."

The English Electric Company Ltd., in addition to their four other plants in England has purchased the Siemens Works at Stafford and has taken over the business of the Siemens Company of Canada Ltd. The English Electric Co., Ltd., will handle a complete line of electrical equipment. Offices will still be at Transportation Building, Montreal, and Mr. C. W. Stokes remains as manager.

It is stated that while on his visit to Canada, Mr. G. R. Hall Caine was made a trustee of the American Paper and Pulp Co., and a director of the Saguenay Pulp and Power Co., The Chicoutimi Pulp Co., Ltd., the St. Lawrence Pulp and Lumber Co., and seven other subsidiary concerns.

# Mould Growths on Wood Pulp

By FREDERICK BARNES, Shawinigan Falls.

With the growing interest in the investigation of causes for the deterioration of pulp, the literature is being searched for information on the subject. In the Pulp and Paper Magazine for January 1912, there appeared the article by Mr. Barnes which is here repeated, as that issue is not available to many of those now interested in this matter.

The following notes were obtained during the period when the writer acted as chemist to a large English paper mill using large quantities of mechanical and chemical pulps.

The mill in question kept large quantities of pulp stored in the open in large stocks, exposed to the weather for long periods of time. During the year 1907 some of the stocks of mechanical wood pulp were opened up and discovered to be seriously damaged by rot; to such an extent had the deterioration gone, that many a thousand dollars' worth of pulp was utterly ruined and 20 to 25 per cent. of the pulp was rendered soluble in water.

During the years 1908-1910, many shipments of both Scandinavian and Canadian pulps were found to be more or less damaged by fungoid growth and rot. The writer examined a large number of samples from the contaminated bales microscopically with the view of determining the main cause of the deterioration.

Numerous kinds of fungi and mould growths were observed, some of which are illustrated here. The chief effect of these growths was a more or less black-

ish discoloration in the pulp produced by a microscopic fungus, described as a species of *Cladosporium*:

Fig. 1 shows the mycelial threads of this fungus, sketched under a power of 700 diameters.

Fig. 2 shows the mycelium growing through one of the discoid markings of bordered pits of coniferous wood.

It is evident from this, Fig. 2, that the fungus is of very minute nature and its destructive power very great. This type of fungus is evidently responsible in most cases for the systematic decay of groundwood pulp, the main work of breaking down the fibre substance being done by enzymes emanating from the fungus.

The mycelium of this fungus was observed in most cases where decay had set in, though in the cases where the degradation had proceeded to a maximum, the mycelial threads (if any) had disappeared along with all trace of fibrous structure.

Fig. 3 shows a type of green fungus growing on the surface of the sheets of paper in the interior of a bale of Norwegian hot-ground pulp. The mycelium of the fungus was colorless, the green color being due to quantities of green fission fungi.

Fig. 4 shows a type of white fungus growing on the surface of the sheets in the interior of a bale of mechanical pulp. The white threads were covered with spores. Large quantities of spherical and elongated cells, motile and otherwise, were present, also motile bacteria.

Fig. 5 shows a sample of black fungus found in a bale of Nova Scotian pulp. This fungus was sparsely scattered through the pulp, but showed up very conspicuously, due to the relatively large dimensions of the growth.

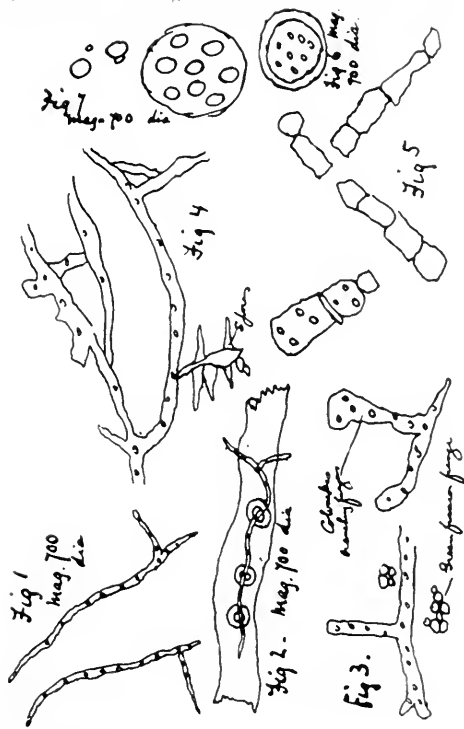
Fig. 6 shows a type of organism preponderating in a sample of rotten Norwegian pulp.

Fig. 7 shows the fission fungi responsible for the decay of the outside edge of a bale of Quebec pulp. The interior of the bale was infected with the dark mycelia of *Cladosporium*. In this case, the fission fungi probably found a good feeding ground on the already infected pulp and rapidly rotted the external parts.

The Chromogenic moulds noticed were chiefly of a brick-red color; this particular mould only developed on bales which had stood exposed to the air for considerable periods. The growth was entirely a surface action, obviously aerobic in character. This type of mould had very little tendering effect on the pulp. Yellow and violet moulds were also noticed.

In one case, fungus had attacked some Swedish moist sulphite pulp. The sample examined was from a bale at the base of a stock, and was permeated with the mycelia of fungus; the cellulose fibres were broken up into short lengths as in rotten ground wood. The larger types of branching fungi noted above, do not appear to deteriorate the pulp to a great extent, as they are of rapid growth and surface action.

To determine the rapidity at which fungoid growths and other discolorations in pulp increased in area, an experiment was conducted as follows: Five bales of pulp, contaminated in various ways, were taken. After thorough examination, all the conspicuous



markings were carefully outlined on the moist pulp with violet pencil; the bales were then removed and built up into a compact stack, surrounded on all sides, top and bottom, with moist sound bales. The stack was finally covered in with cotton felt and left untouched for six weeks, then re-opened and examined.

The discolorations pencilled off were: (1) Black fungoid growth at edges of sheets; (2) White branching fungus; (3) Small, dark grey spots (*Cladosporium*) scattered about sheets; (4) Greyish markings due to reaction of iron and tannin bodies; (5) Dark brown stains.

On re-opening the bales it was found that (1) The black fungus had sensibly increased in area; (2) the white fungus had pushed into the bale far beyond its original limits; (3) the grey *Cladosporium* spots had increased slightly in area; (4) the grey iron stains had spread slightly; (5) the brown stain had increased about 20 per cent. well into the bale. These tests prove fairly conclusively that in the short space of six weeks a sensible increase in fungoid growth and in other contaminated areas had taken place, and serve to show the danger of keeping infected pulps in the stock for any length of time.

The brown stain in the pulp seems to have originated entirely from outside sources, as it contained more tannin bodies than the unstained pulp. A probable explanation of this is that the bale had been placed on a wooden platform or wharf in contact with a pool of water rich in extractive matters from wood bark.

This sort of thing is to be avoided, as the more impurities an organic body contains, the greater tendency there is for that body to decay.

Experiments were also carried out to ascertain whether rotten wood pulp could affect sound pulp by direct contact. Pieces of rotten pulp were made up with good pulp into bundles and wired up, then incubated for several weeks. No trace of deterioration of the sound pulp could be detected where the bundles were opened up.

### PULP AND PAPER COMPARED WITH OTHER EXPORTS.

A further analysis of the tabulated report of Canada's pulp and paper exports and tonnage on other wood products is given as follows in the Ottawa Citizen.

In wood and wood products alone Canada sends the world a quantity which exceeds in value what she receives from outside her own borders by \$219,254,875. In the twelve months ending July 31st, 1920, Canada exported as measured by value received the following quantities: Newsprint, \$60,081,414; other paper, \$12,060,050; manufactured wood, \$122,706,285; wood pulp, \$57,919,248; and other manufactured wood, \$3,919,651, a total of \$256,689,648. Imports in the same period were as follows: Paper, \$11,912,692; and wood, \$25,522,081, a total of \$37,434,773. In both cases for every item this represents a great increase over the same period in the previous year and a still greater over 1918. Contrasting the above figures with those for the twelve months ending July 31st, 1918, it is seen that there has been a phenomenal increase in exports to the value of \$124,660,770 or 95 per cent. and of imports to the value of \$13,893,281 or 59 per cent.

In the paper exports newsprint bulks large as the

great money getter for Canada. An analysis for the first four months of the present fiscal year, that is April, May, June and July shows that the foreign demand for this chief product of Canada outside of those originating on the farm is still on the increase. One can fairly deduce, seeing that the export for 1920 for these four months brought into Canadian pockets \$21,916,549 as against \$15,035,927 for 4 months in 1919, the same rate of increase would hold good for the rest of the year. The increase in quantity for this period was only from 4,269,216 to 4,906,188 cwt., showing that a greater increase probably came from raising the price than increasing the export sales. The total of all papers sale for these four months in 1918, 1919 and 1920, respectively, was as follows:—\$14,487,110, \$17,532,409 and \$26,423,454. The total foreign wood pulp sales compared for the same periods were respectively, 4,431,459 cwt. valued at \$12,220,692 for 1918, 3,417,740 cwt. valued at \$9,534,827 for 1919, and 5,904,075 cwt. valued at \$26,070,593 for 1920 to July 31st. This year at least paper manufacturers outside Canada are getting their partly manufactured supplies.

### Pulpwood Exports.

In pulpwood also they are getting more than last year though not so much as in 1918 as shown by the following figures for the first four months of 1918, 1919 and 1920:—645,723 cords valued at \$6,232,254; 328,386 cords valued at \$3,260,241; and 368,851 cords valued at \$4,061,376.

The United States as greatest buyer of paper is paying much more this year than last.

Here are the comparative figures for all paper manufactures exported to the Southern Republic for the first four months of the fiscal years of 1918, 1919 and 1920 respectively: \$12,323,501 and \$14,053,282 and \$20,798,774. For the United Kingdom the increasing figures run: \$364,878 and \$988,550 and \$1,548,102. To other countries they were \$1,798,731 and \$2,490,577 and \$3,076,578. Wood pulp exports to the United States were for the same periods consecutively \$11,145,654 and \$7,136,018 and \$20,839,881; to the United Kingdom, \$7,089 and \$992,486 and \$3,436,193. Pulpwood exports were to the United States, \$6,232,254 and \$3,260,241 and \$4,061,376. To other countries we sent no pulpwood.

### Newsprint Increase.

A further analysis of newsprint figures shows that for the four months under consideration exports have increased to the United States, the Argentine, South Africa and New Zealand, while decreasing to the United Kingdom and Australia. These decreases matter little in the aggregate as the United States takes 91 per cent. of the whole exported newsprint. For these four months the United States took 4,426,763 cwt., valued at \$19,721,910, as compared with \$3,749,315 cwt., valued at \$13,218,611 for the same period in 1919. The totals of newsprint received by the other countries for the last four months were respectively: the United Kingdom, \$197,835; Australia, \$592,383; Argentine, \$393,547; New Zealand, \$314,278; and South Africa, \$285,122. The total exports for these four months of paper pulpwood and pulp were respectively: United Kingdom, \$4,984,295; United States, \$45,900,031; and other countries, \$5,671,097, a grand total of \$56,555,423, as compared with little more than thirty million dollars for the same period in 1918 and 1919.



# Belgian Paper Industry Re-covering

(By Special Correspondence)

The remarkable recovery of the paper industry in Belgium is set forth in the following tables and comments. It is particularly interesting to note how widely these products are sold in the world's markets.

The pulp and paper imports and exports of Belgium for the six months ending June, 30, 1920, as compared with the corresponding months of the previous year are given in the following tables, in kilograms, (1000 kg.=2,204 lbs, approximately 1 long ton.)

Wood Pulp (Free)				
Origin (Imports)	Imports		Exports	
	1919	1920	1919	1920
Germany	301,052	126,328		2,0386
Canada		347,621		
Spain				50,537
United States	10,499	263,297		
France	170			6,721,427
Great Britain	3,519			
Hamburg		518,610		
Norway	5,304,609	39,728,955		
Holland	4,010,847	614,173		415,734
Sweden	4,945,510	22,329,230		
Other Countries		1,396,702		
Total	14,576,107	56,324,919		7,388,084
Total for year	54,979,061		1,437,313	

Wall Paper (Dutiable)				
Origin (Imports)	Imports		Exports	
	1919	1920	1919	1920
Germany	27,280	188,890		10,306
Argentina				19,430
Chile				9
Spain				21,227
United States	19	975		7,129
France	249,631	378,096	534	691,820
Great Britain	625,785	534,519		13,922
Mexico				9,000
Holland	3,193	79,951		52,175
Peru				3,918
Switzerland	17,126	647		74,446
Turkey				11,210
Other countries	49,313	376	139	119,165
Total	927,647	1,188,454	682	1,032,837
Total for year	1,889,217		533,009	

Board (Dutiable)				
Origin (Imports)	Imports		Exports	
	1919	1920	1919	1920
Germany		438,978		
France	24,266	71,601	13,000	20,931
Great Britain	362,370	388,987		116,095
Hamburg		31,760		
Norway	25,516	95,463		
Holland	1,441,383	917,434		19,511
Sweden	106,648	247,292		
Turkey				3,850
Other Countries	36,240	441,894		7,882
Total	1,996,403	2,630,319	13,000	198,209
Total for year	4,514,823		52,075	

News Paper (Dutiable)				
Origin (Imports)	Imports		Exports	
	1919	1920	1919	1920
Germany	19,364	31,400		
Great Britain	983,091			
Holland	2,581,268	2,365,115		150
Other Countries	499,578	324,927	15,134	109,667
Total	4,083,301	2,721,442	15,134	109,817
Total for year	8,155,775		99,891	

Non Denominated Papers (Dutiable)				
Origin (Imports)	Imports		Exports	
	1919	1920	1919	1920
Belgian Congo				33,672
Germany	68,743	3,884,633	13,695	113,528
Argentina				34,686
Australia				26,042
Brazil				3,948
Canada		20,311		67,126
Chile				1,190
China				524
Cuba				21,120
Denmark		2,688		25,799
Egypt				80,982

Spain	1,215		178	15,792
Straits				2,876
United States	14,449	319,756		121,579
France	360,094	1,056,805	45,225	3,792,913
Great Britain	935,561	2,012,905	277,906	2,089,332
Greece				140,677
Hamburg		1,777		
British India				70,964
Dutch India				14,992
Ireland				118,078
Japan		1,534		82,793
Norway	202,875	489,079	47	72,670
Holland	1,215,112	1,583,648	16,396	697,178
Russia				359
Sweden	273, 08	944,440		33,459
Switzerland	1,545	51,029	17,536	98,275
Tunis				12,324
Turkey				47,947
South Africa			156	1,177
Uruguay				2,567
Other Countries	6,060	123,024	44,123	158,336
Total	3,179,292	9,974,453	413,202	7,989,666
Total for year	10,707,917		3,471,557	

RECAPITULATION				
Articles	Imports		Exports	
	Six first months of the years 1919 and 1920	1919	1920	1919
Wood Pulp	14,576,107	56,324,329		7,388,084
Tot. of the whole year	54,979,061			1,437,313
Wall Paper	972,647	1,188,454		682
Board	1,996,403	2,630,329	13,000	198,209
News Paper	4,083,301	2,721,442	15,134	109,817
Non denominated Papers	3,179,292	9,974,453	413,202	7,989,666
Printed matter				
Books, sheet write				
St.	414,351	457,115	9,091	180,909
Bound books	112,166	168,047	24,232	318,718
Newspapers, periodicals, etc.	1,493,531	1,010,179	10,102	124,139
non denominated	217,092	817,698	12,731	115,237
Total	12,378,781	18,963,007	498,176	10,110,532
Tot. of the whole year	29,962,871		4,573,749	

From a Belgian point of view, the most interesting figures in the above records are those of the paper exports. The enormous increase, as compared not only with the corresponding months of the previous year, but especially with the first four months in which period they attained a total of 5,556,661 kg. shows evidently that the restoration of the Belgian Paper Industry has entered its final state of completion. This is shown moreover by the fact that the sudden development of the export trade correspond exactly with a slackening in the home market.

The "wave of reduction" that was disastrous to several of our industries has not been without an effect the paper trade. Home consumers are still refraining from buying and as there seems to be some stock, some mills have already reduced their output.

Strikes, more of a political than of a material character, in some of the leading mills, have lead to a complete capitulation of the employees and helped in this manner indirectly, to strengthen the position of the Paper Industry in general, both towards the trade and the employees.

Prices have gone some-what back, but have a tendency of going upwards again. Quotations are at present as follows per 100 kg. on mill:

Board, straw	140	165 fr.
News	360	370 "
Sulphite writing	420	470 "
Sulphite Bond	540	600 "
No. 1 Manilla	410	450 "
Butchers Imitation Parchment	415	450 "
Grease proof	500	650 "
Brown Wrapping, strong	300	350 "
Brown Wrapping, ordinary	200	250 "

The pulp market is holding firm. The only sulphite and sulphate pulp mill in Belgian using in its own paper mill its whole output. All other paper mills depend entirely on foreign supplies, which these last months were rather more than up to the demands. Prices went abek, owing for a great deal to the more favorable rate of exchange. An advance is in sight and it is feared that for the next months supplies may be behind as it is reported that Great Britain and France, have purchased important quantities in Sweden.

Prices f.o.b. Antwerp are at present, per 100 kg. :		
Mechanical . . . . .	155	200 fr.
Sulphite bleached . . . . .	410	440 "
Sulphite unbleached . . . . .	235	250 "
Sulphite easy bleaching . . . . .	255	295 "
Sulphate easy bleaching . . . . .	225	235 "
Kraft . . . . .	198	215 "

After all, notwithstanding difficult periods, all paper mills have been enjoying till now a golden time. As I stated in my previous report all made big profits. At the last stockholders' meeting of the Anciens Etablissements Louis De Noeyer, held this month, the dividend for the past fiscal year was fixed at 80fr, whereas the usual amount was 40-45 fr. and for one exceptional year 52 fr.

Paper mill stocks have been driven up to unusually high rates and it will be worth putting them on record in a following article.

#### INDUSTRIAL CO-OPERATION.

The following is an extract from an address of Mr. George W. Sisson, Jr., delivered before the American Paper and Pulp Association during the recent convention.

"It is natural during a period of readjustment that great industrial problems should arise, or that long standing difficulties should be emphasized. A careful study of industrial conditions in America and a somewhat exhaustive inquiry into the efforts made and the attitude taken by the more thoughtful, far-seeing and enterprising manufacturers to meet the demands of the hour, reverse any maladjustments of the past and prepare the developments of the future, gives warrant for the hope that these disturbing problems will be solved by a process of orderly evolution, having as its basis a genuine spirit of co-operation and good will predicted on clear recognition of mutual responsibility as between employer and employee and by them jointly to the public. Capital and labor will reach the sure ground of adjustment whenever, through sanity or suffering they arrive at a willingness to be fair. Fairness is absolutely necessary to the full development of industry. It is as essential as steam. It asks nothing of generosity, nothing of mercy; it is simply the child of justice, and before it no labor difficulties can long endure.

A situation conducive to dissatisfaction lies in the present high prices of commodities caused by under-production and the lowered purchasing power of the dollar. We must prod our production. The outstanding fact of the situation is that the workers of the United States and those who direct them can and must produce an ample supply of the things that contribute to the comfort, security and refinement of our life. All of us are producers except the few who evade the common duty, and with every man working to reasonable capacity by way of doing his share of the nation's work, no general or prolonged shortage can exist."

#### THE USE OF SULPHUR AND SAND IN SEWER PIPE JOINTS.

In constructing a main line thirty-six inch sewer for the conveyance of acid waste, for a pulp mill in Quebec, the question arose as to what material should be used in pouring the joints. Cement was out of the question on account of the deteriorating effect acid would have upon it. A number of mills were corresponded with upon the subject but no very satisfactory method was recommended.

Ultimately the use of sulphur and sand was suggested by the Engineering Department. Lead wool was considered but rejected upon the ground that the cost was high. On the other hand, sand was available on the ground from excavations and sulphur could be purchased at the dockside in Three Rivers.

The method used was as follows:—

"An ordinary iron boiling cauldron over an open wood fire was used for heating the sulphur and sand. The proportions used were one to one. The whole was heated until the sulphur melted and a semi-liquid mass formed. Three pipes were placed vertically in the trench and by means of a galvanized conductor pipe bent at one end to fit into the flange of the pipe, the mixture was poured from a ladle on the top of the trench directly into the joint. The joints of each section of the three pipes in the trench were then poured in the ordinary manner with the use of a runner."

"The inside of the joints were pointed with wet clay. The joints cast and became solidified in about one hour after pouring. The length of time for solidification of course depended upon the coldness of the weather.

The joints so far have been all that could be desired, having neither blow-holes nor cracks. The solidified sulphur and sand is extremely hard and the only impression made on it with a large knife was to scrape fine particles away. In appearance it is almost metallic.—C. K.

#### ENORMOUS ECONOMIC LOSS DUE TO STRIKES.

A total of 6,516,764 working days—the equivalent of more than 20,000 working years, or one year for more than 20,000 men—were lost directly by strikes in the first five months of 1920, according to the New York World.

The known loss in wages and output is placed at \$104,413,370.

Losses entailed by idleness of the coastwise longshoremen, the harbor boatmen of New York and the switchmen on strike at the New York terminals have been estimated at an additional \$53,160,000, bringing the gross known loss to a minimum of \$157,603,370.

In reality, however, the losses have greatly exceeded this huge sum.

Losses due to the enforced idleness of 250,000 in the steel district surrounding Pittsburgh as a result of transportation troubles, and the penalties, estimated at \$30,000,000, imposed by the "outlaw" switchmen in Chicago, are not included in the conclusions stated in the foregoing paragraphs.

As a result of its survey of industrial conditions throughout the United States, just completed, The World finds that the feeling of the public is one of disapproval of all strikes and that "the open shop plan appears to be growing steadily."

The workman is beginning to realize that all strike losses are eventually coming out of his own pocket.

# Imperial Forestry Resolutions

Mr. Clyde Leavitt, chief forester for the commission of Conservation has kindly contributed the following summary of the very important resolutions passed at the Imperial Forestry Conference in England in July. They were thus reported in the London Times:

The British Empire Forestry Conference, which has held several sittings in London during the last fortnight and concluded its official deliberations yesterday, adopted the following resolutions, which the delegates are to bring to the notice of their respective Governments:—

## Forestry Policy.

In view of the great importance to the Empire as a whole, as well as to each of its component parts, of producing a sustained yield of all classes of timber, and of encouraging the most economical utilization of timber and other forest products, and of maintaining and improving climatic conditions in the interests of agriculture and water supply, each of the Governments of the Empire should lay down a definite forest policy to be administered by a properly constituted and adequate forest service. (Mover:—Mr. H. R. Mackay, Australia seconder, Mr. E. Battiscombe, East African Protectorate.)

## Survey of Resources.

The foundation of a stable forest policy for the Empire and for its component parts must be the collection, co-ordination, and dissemination of facts as to the existing state of the forests and the current and prospective demands on them. To this end it is of first importance that a systematic survey be undertaken in each part of the Empire which will not only serve as the basis of forest policy in that part, but also provide a means for reviewing the forestry position of the Empire as a whole. (Mr. A. J. Gibson, India; and Mr. E. H. Finlayson, Canada.)

## Constitution and Status.

In order to attain continuity in the development of forest resources, it is desirable that certain elements of stability be secured in the constitution of the forest policy. This may be done by the following measures:—

1.—The definition, where this has not been done already, of forest policy in a Forestry Act or Ordinance.

2.—The reservation, for the purpose of economic management and development, of forest land under conditions which prevent the alienation of any which is primarily suitable for forest except for reasons consistent with the maintenance of the forest policy as a whole.

3.—The assurance to the Forest Authority of funds sufficient to carry out the accepted policy for a series of years.

4.—The grant to members of the Forestry Service of the status of Civil servants, with due provision for pension.

5.—The appointment as the chief officers of the Forestry Service of persons having a high standard of training in forestry, their selection and promotion being by merit alone.

6.—The establishment in each of the larger parts of the Empire and for the Colonies not possessing responsible government, collectively, of an officer, or officers, having special duties of advising as to forest policy and surveying its execution. (Mr. C. E. Lane Poole, Australia, and Mr. C. S. Rogers, Trinidad.)

## Organizations of Forest Industries.

It is extremely desirable that the Forest Authority should be in close touch and consultation with organizations representing the interests concerned in the extraction and utilization of timber and other forest products. (Mr. M. A. Grainger, British Columbia, and Mr. W. D. Ellis, Colonial Office.)

## Publicity.

It is the duty of the Forest Authority in every part of the Empire to adopt and encourage methods of education and publicity in order that the people may be fully informed of the aims and purposes of forest policy and may thus be induced to cooperate towards its successful fulfilment. (Mr. C. E. Legat, South Africa, and Sir Hugh Shaw-Stewart, Consultative Committee, Scotland.)

## Distribution of Forest Plants.

The Conference have had brought to their attention the advantages which have accrued in several parts of the Empire from the wide distribution of forest plants, and desire to bring the method of encouraging tree-planting by distribution of plants either from Government or private nurseries gratuitously or at cost price, to the earnest attention of their Government. (The Hon. E. Lucas, Australia, and Mr. A. J. Gibson, India.)

## Terminology and Trade Nomenclature.

The following questions should be referred to the proposed Forestry Bureau immediately on its formation:—(1) Standardization of forest terminology, (2) correct identification of timbers, and standardization of their trade names. (Professor R. S. Troup, India, and Mr. P. H. Clutterbuck, India.)

## Research.

Scheme of research work approved by the Conference is recommended to their Governments for early consideration and approval by them. This takes the form of the report from a committee appointed "to prepare a draft scheme for the organization of that research work which is essential to the progress of forestry, including both the production and utilization of forest produce, the committee to pay particular regard to the importance of avoiding overlapping and of cooperation with existing institutions." The report deals with the organization and sub-division of research, with the relation of the different parts of research to one another and to education and practice, and with the subjects of research both generally and in relation to the needs of the different parts of the Empire.—(Professor R. S. Troup, India, and Mr. H. M. Thompson, Nigeria.)

## Education

It should be a primary duty of forest authorities throughout the Empire to establish systematic schemes of forestry education. It has been found, for climatic and other reasons, that it would not be possible for each part of the Empire to establish a complete scheme of forestry education of its own, and therefore it is essential that those parts of the Empire which are willing and able to establish complete systems should, as far as possible, frame such schemes with a view to combining for meeting the needs of those parts which can only themselves make a partial provision for their requirements. Part of this subject has been dealt with by a Committee, whose report, which refers mainly to the higher training of forest officers, is approved by the Conference. The main principles embodied in this report are as follows:—

1.—That one Institution for training forest officers be established in the United Kingdom.

2.—That students be selected from graduates having taken honours in pure or natural science at any recognized University.

3.—That it be an integral part of the work of the Institution to arrange supplementary courses at suitable centres for students requiring special qualifications and also special courses for forest officers from any part of the Empire, whether at the Institution itself or at centres of training in other parts of the world. The Governments should recognize these courses as part of the ordinary duties of the forest officers, at any time during their service, and the Governments concerned should give special facilities to forest officers in their service to attend such courses.

4.—That a Department of Research into the formation, tending, and protection of forests be associated with the training Institution.

5.—That encouragement should be given to the existing provision made by Universities and colleges for forestry instruction for those who do not desire to take the full course suggested for the forestry service. It appears that this is especially applicable to the United Kingdom. It is also desirable to make adequate provision for woodmen's schools for the training of foresters as distinct from those which are intended for forest officers. (Mr. H. R. Mackay, Australia, and Mr. C. E. Legat, South Africa.)

#### Forestry Bureau.

The conference approve the suggestions and recommendations for the constitution of an Imperial Forestry Bureau which are contained in the report of a committee, and strongly urge upon their respective Governments that they should contribute to the support of the bureau as therein suggested. They feel that it will be largely upon the work of such a bureau that the proper development of the forest resources of the Empire will depend, and they therefore cannot over-emphasize its importance as a part of Empire organization. (Mr. R. L. Robinson, United Kingdom; and Mr. L. Palfreman, Sierra Leone.)

#### Future Conferences.

The conference is convinced that the holding of conferences of representatives of the Empire on forestry matters is of great service. They desire to thank the Forestry Commission of the United Kingdom for causing the conference to be assembled and for making the necessary arrangements. They recommend that the next conference be held in the year 1923, and that, if the Dominion Government approve, it be convened in Canada. (Sir Claude Hill, India, and Mr. F. D. Adlard, United Kingdom.)

### SEMI ANNUAL REPORT OF LAURENTIDE.

Following the meeting of the board of directors of the Laurentide Company, Limited, held at the office of C. R. Hosmer, the vice-president, the financial report of the company for the first six months of its operations, was given out. At the board meeting, Mr. Hosmer occupied the chair, in the absence of George Chahoon, Jr., Sir Lomer Gouin, the newly-elected director, took his place at a board meeting for the first time since his election.

The financial statement of the company, covering the first six months of this year's operations, is an excellent one and indicates a large growth in earning power. The new company took over the plants and operations of the old company as of January 1 of this year.

As compared with the earnings of the old company, the first six months are but little behind the full twelve months period reported on a year ago. Total income from operations from January 1 to June 30, amounted to \$2,566,673, compared with \$2,955,979 in the previous full year, and \$2,593,835 in the 1918 year. After the usual charges, net profits before deducting dividends amounted to 1,499,539 for the six months, compared with \$1,823,657, in the 1919 year and \$1,704,655 in the 1918 year.

As the capital stock of the new company is just three times the amount of that of the old company, earnings percentages are interesting. The new company has a paid-up capital of \$28,800,000, which stands as a first charge against earnings, there being no bond issues or preferred stock. On this basis, the company earned in the six months 5.20 per cent on the outstanding capital, or at the rate of nearly 11 per cent for the full year. On the old basis of capitalization, \$9,600,000, earnings in the half year were at the rate of 15.61 per cent compared with 18.99 per cent for the full year 1919, and 17.75 per cent for the 1918 year.

In other words, in the half year just ended the new company earned equivalent to nearly 32 per cent on the capitalization of the old company.

After providing for dividends for the six months of \$864,000, surplus remaining was \$635,539.

Profit and loss account follows:

	6 ms. 1920	Yr. 1919.	Yr. 1918.
Op. income . . . . .	\$2,566,673	\$2,955,979	\$2,593,835
Inter., etc . . . . .	304,447	236,926	227,296
War T. res. . . . .	280,000	240,000	240,000
Pens. Fd. . . . .		150,000	150,000
Deprec. & depletion . . . . .	482,687	505,396	271,884
Net profit . . . . .	\$1,499,539	\$1,823,657	\$1,704,655
Dividends . . . . .	864,000	1,392,000	960,000
Surplus . . . . .	\$ 635,539	\$ 431,657	\$ 744,655

The balance sheet of the company is probably the most interesting portion of the statement, however, inasmuch as it indicates a sharp growth in assets for the new company as against those indicated in the last report of the old company. For instance, property account is given, as at June 30 last, at \$21,599,846 net, as compared with but \$8,335,635 in the report of the old company a year ago.

The various items included in the balance sheet, however, while comparable, are somewhat misleading in table form, as they do not altogether check up, item for item, especially on the liabilities side of the account. Total assets, which now amount to \$35,087,015, or about double the \$17,612,520 reported last year, indicate how great the growth in general valuation has been.

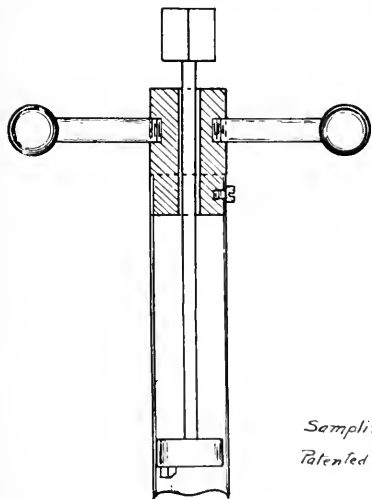
The statement of working capital is probably more relevant than anything else of the financial strength of the company at the present time, and the great progress that much have been made during the past six months, despite the fact that the company had not then entered the period when the really high newsprint prices prevail.

Current assets amount to \$13,431,229, as compared with \$7,264,463 reported by the old company a year ago, while current liabilities now total \$5,377,761 compared with \$1,882,416. This indicates net working capital of \$8,053,468 as compared with \$5,382,016, this being an increase of no less than \$2,671,452 over the 1919 showing.

### PULP SAMPLING TOOL.

We have recently been informed by Mr. M. L. Griffin of a sampling tool for cutting discs, which obviates the central punch and swinging arm which made disc sampling difficult.

Upon receipt of the blue print, and further inquiry we find that this tool was devised by a Canadian about twelve years ago and is now manufactured in Canada



under license, as it is patented both in the United States and Canada.

We are indebted to the inventor for the cuts accompanying this article and the following description:

Cut of the tool in section shows the scalloped cutting edge, chiselled inside. This is necessary to prevent binding. The discs cut are 1.3-8 inch in diameter, from tool as now on market. Nothing is gained by larger size. The plunger used to push out the sample is provided on one side with a stud that tends to turn the sample into an inclined position for expulsion. The sample is obtained by circular motion with the tool vertical to the surface being cut. While if necessary, the bales, rolls, or laps, can be cut in any position, they are most readily cut when in a position for the

operator to press down vertically while grasping the handles, and with both arms straight, or nearly so.

The print shows comparative sizes of samples by disc and strip methods.

Ten laps were sampled. The strips were cut with a broad chisel, across the lap. This took forty-five minutes. The discs were cut through the center of the lap, thus getting samples out of twelve places in the unfolded sheet, a row of four holes across the sheet at three places in the machine direction.

The strip samples weighed over 7000 grams requiring practically all the space in an oven 24" x 36" and 24" deep when spread out to dry. The disc samples took eight minutes to cut, weighed a little over 600 grams and were conveniently dried in the 6" x 12" wire tray shown behind the sample. This tray is two inches deep and if thirty laps were sampled from a car, there would be room to dry samples from four cars at a time in the oven referred to above without congesting.

This tool has been used for all kinds of pulp and forms of package.

The method of sampling for each case can soon be worked out, and will depend on the varying circumstances, whether receiving or shipping, long storage or recent.

Many parallel and cheek tests can be made in a short time. In special cases every bale in a car can be sampled while it is being unloaded.

Convenience and rapidity in use make it possible to take samples from a much greater number of packages than other methods in same time, without producing unwieldy bulk of sample or congesting the oven.

### NEW BLEACH PLANT FOR LINCOLN MILLS.

The Lincoln paper mills company have now their new bleaching plant in operation, and are turning out ten tons of bleached sulphite per day. The pulp is used in the manufacture of bleached glazed paper, made in the Lybster paper mills, where they are making over sixty tons of this grade of paper per week on the 112-inch machine. The company have also installed an electric drive on the screen of the paper machine in the Lincoln mills, and are operating the machine by steam and electricity until the electric drive for the whole machine is completed.

### BRITISH TRADE NOTELETS.

There is a falling off in the orders for newsprint at the present time in England.

Owing to a strike of printers Manchester and Liverpool were left without papers — daily and weekly. The loss was a serious one for some of the paper mills.

"Palestine Weekly", published in Jerusalem, is booming papyrus grass, which grows luxuriantly in that country, as a suitable raw material for paper. A mill has recently been built in East Africa to make papyrus pulp.

Mr. G. F. Steele, General Manager of the Canadian Export Paper Co., is being interviewed by the reporters here and he has put some erroneous ideas out of the heads of Englishmen about pulp and paper matters.

Night schools are now in progress in London for boys or students who want to study papermaking. At the end of the course examinations are held and prizes awarded.



Photograph showing comparative bulk of strip and disc samples (weighing 7000 and 600 grams, respectively) and tray used to dry the discs.

### THE PRINT PAPER SITUATION.

For some time Jason Rogers has been working on a proposition to relieve the small consumers of newsprint who are more or less dependent on the spot market. These publishers have been hard hit by the flight of prices in the last year. With a little waste sulphite liquor adhesive to hold the associated publishers together, Mr. Rogers' proposition ought to succeed. It looks like the one way to get cheaper paper for them. This is what Mr. Rogers says in a full page advertisement in the "Editor and Publisher" last week:

To Newspaper Publishers:

Manufacturers have given notice of a reduction in supply to customers for 1921 exceeding 200,000 tons.

Foreign print paper is quoted at from 9 to 10 cents alongside dock, New York, C. I. F.

Domestic and Canadian spot paper is quoted from 10 to 12½ cents F. O. B. mill.

There is every reason to believe that the manufacturers are going to try to make 8 cents a pound the minimum price for 1921.

There is no shortage of stumpage.

There is and will be an artificial shortage of mechanical equipment to make paper.

Present prices are absolutely unjustified.

I am going forward with new mill construction plans as providing the only way out.

I have now on hand and am assured ten year contracts for upwards of 200 tons a day.

Publishers who realize the seriousness of the hour will do well to send along their contracts and thus secure independence a few months hence.

I am working entirely independent of associations or corporations for the well being of the newspaper industry.

I will protect all signers from exposure to any possible reprisal by keeping identities absolutely confidential.

JASON ROGERS,

Publisher, "New York Globe."

New York, Sept. 15, 1920

### TRACTORS FOR GREAT NORTHERN.

Caterpillar style tractors will be used by the Great Northern Paper Company this winter in its northern Maine woods operations. Orders have been placed for 39 of these machines, several of which are already on the way from Bangor to the north woods. The company experimented with tractors last winter in the woods operations and found them to be useful and economical, deep snow being no impediment to their progress. The 39 machines, it is claimed, will do the work of 800 horses, and make a tremendous saving in the matter of supplies which are necessary for horses when used.

### WORSHIPPED IN PAPER MILL.

In the course of his witty review of the town of the Imperial Press Conference delegates, Mr. N. Levi, of Pretoria S. A., said: "We worshipped in the power houses of paper mills lofty enough to be cathedrals. We looked the pygmies—we are beside the powerful piles of wood that had swum their hundred of miles through enchanting river scenery. We lunched off gorgeous salmon perpetuated social rites at many an afternoon tea laid down the law and listened at boxes of dainty dinners, to statistics of what you have to offer."

### PUTTING TIGHT BELT ON PULLEYS WITH A ROPE.

One way of putting a tight belt on its pulleys is by use of a rope. The method generally followed is to put the belt on the drive pulley first and then on the driven pulley as far as it will go. Then a loop of rope is passed over the rim of the pulley and around the belt, the free ends being passed through the loop. This really constitutes a slipknot around the belt and pulley.

The power is then turned on and the rope holds the belt to the pulley until it slips into place. As the belt leaves the pulley the rope is pulled out of the hand and as the increasing distance opens the slipknot the rope falls to the floor.

If the belt is heavy or the rope rough, it is advisable to wear a glove, and care should be exercised in turning on the power. Do not wrap the rope on the hand.

It is better, of course, not to have a belt so tight that it has to be forced on the pulleys, but sometimes this is unavoidable, as all men who have had anything to do with the use of belting know, and in this event the above method will be found unusually satisfactory and a great time saver also.—The Amphibian.

### THREE TEAMS TIED IN ST. MAURICE LEAGUE.

Grand Merce.—By defeating Three Rivers in the play-off of a tie baseball game at Exposition Park, Three Rivers, Sunday afternoon, the St. Maurice Paper Company team is now tied with Three Rivers and the Laurentide Club in the St. Maurice Valley League.

The game was Three Rivers' chance to clinch the pennant, and each one of the three clubs has now won nine and lost nine games. It is probable that the triple tie for the league leadership will be played off during the week by arranging post-season contests. The score was 3 to 2.

### SUPPLIES FROM FINLAND.

The United States can look to Finland for relief in the paper shortage, according to Hugo Riska, an importer of that country, who says that Finland exported almost twice as much paper and wood pulp last year as she did any preceding year in her history, and that the supply is far from diminishing. Mr. Riska is stopping at the Hotel Pennsylvania, New York City. He expects to stay in America some time studying business.

### NEWSPAPERS COST LESS THAN NEWSPAPER.

Stanley Clague, managing director of the Audit Bureau of Circulation, which concluded a two-day session in Toronto Sept. 18, dealing with matters affecting the Canadian situation, made some comment on newspaper problems in an interview. The Audit Bureau is a co-operative association of advertisers, advertising agencies and publishers.

Mr. Clague said the newspaper publishing business was the worst example of merchandising in the whole where the finished product was sold for less real net licenses, as it was the only business than the cost of the raw material. "With but few exceptions," Mr. Clague said, "the subscribers of the daily newspapers of Canada pay less for them than the publisher pays at the mill for his newsprint."

**NEW WAGE SCALE IN ENGLAND.**

(From Our London Correspondent).

London, Sept. 10, 1920.

An award giving increased wages in the paper-making industry of the United Kingdom has been issued by the Industrial Court in London. The workers applied to the Employers' Federation of Paper-makers for an increase in the minimum rates of wages and improvements in the working conditions, basing their claim on the increased cost of living, and to some extent upon the argument that the adoption of the 3-shift system had increased the opportunities for production at some expense to the comfort of the worker. The millowners argued that the amount of the advances claimed could not be justified by the increase which had taken place in the cost of living, since the minimum rates were agreed to in July last year. They pointed out that the industry was already feeling the effects of foreign competition and that orders had recently seriously diminished. The unions claimed that the mill week for shift workers should be 126 hours, divided into 3-shifts of 42 hours each and that the working week for day workers should be 44 hours. The Industrial Court now says that this agreement about changing the shifts put forward does not establish a claim. With regard to wages the Court awarded increases in all cases, but not to the extent claimed by the unions and the workers. The award included the following minimum hourly rates for men workers:—

	Since		Present		Award	
	May, 1920		Claims		of Court	
	s.	d.	s.	d.	s.	d.
Class 1 . . . . .	1	10½	2	4½	2	0
Class 2—shift . . . . .	1	7½	2	11½	1	9
Day . . . . .	1	5¾	2	0	1	7¼
Class 3—shift . . . . .	1	6	2	0	1	7½
Day . . . . .	1	4¼	1	10½	1	5¾

Increases are also given to boys and youths, women and girls employed in the mills. For the information of Canadian millowners I quote the scales laid down for youth and female labor:—

	Age	Since		Present		Awarded	
		May, 1920		Claims		by Court	
		s.	d.	s.	d.	s.	d.
Boys	14		4¾		6		5
and	15		5¾		7		6
Youths	16		7¼		9		7½
	17		8¾		11		9
	18		11½	1	2	1	0½
	19	1	0½	1	5	1	2
	20	1	1½	1	8	1	3
Females	14		4¼		6		4½
	15		5¼		7		5½
	16		6¾		9		7
	17		7¾		11		8½
	18		9½	1	2	1	0½
	19		9½	1	2	1	0½
	20		9½	1	2	1	0½

The rates for paper mills in Scotland, the West of England and Ireland are one penny (two cents) less than the rates quoted above for adult men workers per hour. For all time workers between Saturday and midnight Sunday double time rate of pay is to be paid.

**Workers Displaced.**

It is too early yet to gauge the reception of the Industrial Court's decision by the workers. I have had a talk with some of them and they are not well pleased with the decision, but they say they must be content with what has been granted for the present. The millowners contend that they must go very carefully now as every little increase granted is only adding to the cost of production and bearing in mind this fact one has also to consider carefully the growing expansion of foreign business in England today. Foreign agents were busy all over the country and business in the British mills was not as brisk as it was this time last year. It must be stated that from an impartial point of view the workers had not a strong claim made out. Everybody seems to favor the 8-hour shift but why the paper-mill worker wanted a reduction in one of the shifts is inconceivable. Reduced hours meant reduced output and then there would be uneasiness among the workers, because one section would be doing 42 hours in a week while another would be working 44 hours. The cost of female labor in the British mills seems to have advanced considerably and it is quite evident there is no dearth of it.

**Threatened Coal Strike.**

On the 25th September the coal miners intend to hand in their strike notices if the 14s 2d is not taken off the ton of coal and their other demands acceded to. The position is daily becoming more serious and the great fear is the paper mills will have to stop work as their supplies of coal cannot last for any great period. If this coal strike comes off 2,000,000 industrial workers will be idle and it is a most serious problem at the moment to solve a way of soothing the miners and persuade them to drop their suicidal policy.

**President of British Wood Pulp Association Going to Canada.**

Mr. A. P. Andrews, who will be accompanied by Mrs. Andrews, is paying a visit to Toronto in the course of a couple of weeks. He sails this week as a delegate to the Imperial Council of Commerce and will represent the London Chamber of Commerce, Pulp and Paper men in Canada will now have an opportunity of talking to the President of the British Wood Pulp Association. Mr. Andrews has a great respect for Canada and no doubt he will interest himself in the Canadian pulp progress. He is a splendid type of the British business man.

**Pulp Situation.**

There are good stocks of chemical pulps at all the mills and business for the time being is dull. Buyers are also waiting to see if prices will ease down somewhat, but it is greatly to be feared they must prepare for a disappointment. Indeed, there is every chance of pulp prices going up as railroad rates have been increased this month. The market for groundwood is without any new feature. Prices are about as follows:—

Bleached Sulphite . . . . .	88—89
Easy Bleaching . . . . .	58—60
Newsprint (strong quality) . . . . .	55—56
Unbleached soda . . . . .	51—52
Soda Kraft . . . . .	40—41
Groundwood moist . . . . .	171—
Groundwood (dry) . . . . .	34—35



# Technical Section



## REVIEW OF RECENT LITERATURE.

**A-2 Detection of ligneous impurities in cotton and cotton waste.** *J. Soc. Chem. Ind., Paper*, 26, 627-8, 1920. The usual method of testing cotton and cotton waste for nitration purposes for the presence of woody impurities consists in boiling 2 g. of cotton with 100 cc. of 0.2% solution of rosaniline hydrochloride, and then heating the material with repeated changes of water until the wash water is free from dye. The dye solution is sufficiently strong to color the fibers deeply, and the detection of the ligneous matter is thereby rendered more difficult. Attempts were made to devise a test using the specific reactivity of the lignone groups but they were unsuccessful. A test has been devised using a 0.01% solution of Malachite green containing 50 cc. of 40% formaldehyde and 1 g. of NaHSO<sub>4</sub> per l. The cotton is dyed in a beaker immersed in a boiling water bath, and then bleach solution is added, which discharges the color of the bath and of the cotton, while the woody matter remains green. The test was applied to purified cotton and to cotton adulterated with cotton husk, leaf and stalk, cotton seed, straw, hemp and jute fibers, etc., and was found quite reliable. —A. P.-C.

**A-3 Papermaking qualities of bagasse.** *Bull. de l'Agence Générale des Colonies; Bull. Synd. Fab. Papier et Carton*, 29, 135-6, (May 15, 1920). The following results were obtained by J. Mahen and L. Martod at the Laboratoire Général des Productions Coloniales: Bagasse contains 39% of cellulose and 50% of lignin which is easily eliminated. A yield of 30% of paper pulp was obtained, from which hand-made sheets were prepared. The paper was slightly colored and grainy to the touch, had a satisfactory tensile strength and a somewhat lower tearing resistance. The pulp contains an appreciable amount of cells with low felting power. Before bagasse can be used for papermaking some other satisfactory fuel must be found for the sugar factories. —A. P.-C.

**A-3 Rape-straw.** *Paper Maker; Bull. Synd. Fab. Papier et Carton*, 29, 137, (May 15, 1920). The composition of rape straw is: Cellulose 30.31%, pentosans 24.10%, lignin 10.06%, ash 5.53%. The pulp obtained by the soda process contains cellulose 55.60%, pentosans 30.50%, lignin 10.10%, ash 3.77%. It is especially suitable for the manufacture of cardboard. —A. P.-C.

**A-3 The dwarf palm as a papermaking material.** *Bull. Synd. Fab. Papier et Carton*, 29, 136-7, (May 15, 1920). The parts suitable for the manufacture of pulp are the leaves, roots, and waste products from spinning mills. The treatment presents no special difficulties and is easier than that of esparto, requiring less NaOH. The yield is 28% and is compensated by the low cost of raw material, low consumption of NaOH, and ease of bleaching. The pulp is fine and flexible and has a high felting power. The paper is equal, and at times superior to esparto paper. The roots give a better quality pulp at a lower cost than the wood. —A. P.-C.

**A-3 Treatment of seaweed.** *Eng. patent No. 123, 075*, issued to Darracq, Freres et L. Dupont, France, *Chim. Ind. (Paris)*, 3, 1A, March 1920. The seaweed is

fermented by means of special bacteria and neutralized with oxides or hydrates of the alkali, alkaline earth, Fe group, or Zn group metals. The residue of cellulose is separated; the liquor is acidified and distilled. It yields formic, acetic and butyric acids. The residue from the distillation may be treated for I and K<sub>2</sub>O.—A. P.-C.

**A-4 Micrography of sycamore (*platanus orientalis*) pulp.** L. Vidal, Ecole Française de Papeterie, Grenoble, France. *Papeterie*, 42, 434-9, (May 25, 1920). A detailed description, with diagrams, of the microscopic characteristics of bleached soda sycamore pulp, which revealed, among other things, that it has a higher felting power and is stronger than similar poplar pulp.—A. P.-C.

**A-4.H-O. Notes on bleaching:** determination of the purity of pulp by means of the "methyl number." A. Chamboyet. *Papeterie*, 42, 440-3, (May 25, 1920). The methyl no. is defined as being the quantity of methyl, expressed in 0.1%, obtained from a substance when the latter is treated with HI. The ease with which pulp can be bleached depends on the amount of lignin it contains. HI acts on it according to the equation: C<sub>36</sub>H<sub>30</sub>O<sub>2</sub> (OC<sub>2</sub>H<sub>5</sub>)<sub>4</sub> + 4HI = 4CH<sub>3</sub>I + C<sub>36</sub>H<sub>30</sub>O<sub>2</sub> (OH)<sub>4</sub>. 698 g. of lignin yielding 568 g. CH<sub>3</sub>I, the detn. is carried out as follows: 40 g. of the material is heated with HI (sp. gr. 1.70) and 8% acetic acid in a flask in an oil-bath, the delivery tube being surrounded by a water jacket at 90°C, and then connected to a condenser. The vapor is led into a flask containing alcoholic AgNO<sub>3</sub> solution, the AgI being filtered off and weighed. The purpose of the hot water jacket is to separate the CH<sub>3</sub>I from the C<sub>2</sub>H<sub>5</sub>I formed by the action of HI on lignin. The following results were obtained: fir (abies pectinata) 24.5, birch (betula alba) 25.7, oak (quercus pedunculata) 28.6, ash (fraxinus excelsior) 27.1, linden (tilia parafolia) 25.6, poplar (populus alba) 25.9, pine (pinus sylvestris) 22.5, filter paper (cotton) 0, sulfite pulp 3.4. It would be advisable to determine the relation between the methyl number and the conditions of cooking and bleaching.—A. P.-C.

**A-14 Measuring the gloss of photographic paper.** *Paper*, 26, 782-4, 1920. All light reflected from non-metallic surfaces is polarized at right angles. This polarization is always only partial, but the nearer the surface approaches complete dullness the smaller the portion of the light which is polarized, while the more glossy the surface is the more complete is the polarization. A determination of the % of polarized light in the total light reflected from the surface of a paper would therefore give a definite measure of the gloss of its surface. Slight differences of gloss cannot be accurately measured when the amount of polarized light is small, but can be measured when it is high. The determination can be made by means of a Martens polarization photometer, by replacing by a single central opening the 2 openings through which light enters in measuring blackness or thickness. The angle of incidence should be 56° and daylight should be used only in conjunction with a depolarizer as it often contains polarized light. Precautions for exact results are given in Ostwald's "Physikalische Farblehre."—A. P.-C.



**A-14 The perishing of paper in Indian Libraries.** J. J. Sudborough and Miss M. M. Mehta, J. Soc. Chem. Ind., **39**, 93R, (1920); Paper, **26**, 589, (1920). Paper read at the Indian Science Congress. A number of books from various Indian libraries were examined, and in many instances after periods varying from a few decades to some centuries the paper had become quite brittle whereas copies of the same works which had been kept in Europe were quite good. It was found that paper from esparto grass was particularly liable to deteriorate, and the same probably applies to wood pulp paper, but this has not been in use for a sufficiently long period to make it possible to express a definite opinion. Some flax papers had also become very weak, and apparently cotton papers were the best. The sizing material also exerts a considerable influence, rosin having a very bad effect. Overbleaching causes the paper to become weak. The deleterious action is sometimes apparently due to bacteria and sometimes is entirely chemical. The papers become acid owing to the formation of organic acids. There is a proposal to provide the more important libraries with refrigerated chambers in which the valuable books can be kept.—A. P.C.

**A-15 A new cellulose-destroying organism.** Revue Scientifique: Papeterie, **42**, 409, (May 10, 1920). Hutchinson and Clayton have isolated an aerobic bacteria (*Spirochaeta cytophaga*) which attacks cellulose. It does not grow in peptone media, but can utilize the N of nitrates, NH<sub>4</sub> salts, amines and amino-acids. Its growth is inhibited by soluble carbohydrates. It transforms cellulose into a mucilage of a pectic character, and produces a pigment analogous to carotene and also a small amount of volatile acids.—A. P.C.

**A-15 Studies in the fermentation of cellulose.** G. J. Fowler and J. V. Joshi, J. Soc. Chem. Ind., **39**, 93R, (1920); Paper, **26**, 589, (1920). Paper read at the Indian Science Congress. Various cellulosic materials were inoculated with mud from the bottom of a septic tank, and the rate at which they were broken down was observed. The gas given off contains about 85% CH<sub>4</sub>, and it can be collected and used for heating and lighting. The principal product is acetic acid, and it was suggested that this might be recovered. Raw cotton and raw ligno-cellulose are attacked but slowly; chem. woodpulp and hemi-celluloses much more rapidly. Banana skins are readily fermented. The optimum temp. is 35 C, and the liquid should not be allowed to become too acid. The presence of salts of Pb, Cu and Zn impedes the fermentation.—A. P.C.

**A-15 The chemistry of cellulose.** Cellulophile, Papeterie, **42**, 395-403, (May 10, 1920). A description of the formation, transformation, and degradation of cellulose in the light of our present knowledge of the chemistry of cellulose.—A. P.C.

**A-16 Acid-resisting alloy.** French patent No. 493,982, C. Rossi, Italy, May 17, 1919, *Chimie et Industrie*, **3**, 332, (March 1920). The alloy consists of a ferro-silicon containing 13-15% of Si if it is to be used for Cl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, or HClO<sub>4</sub>, or oxidising agents; and 20-21% Si for use with HCl. The alloy must be very pure, and after fusion in the electric furnace the less fusible impurities, particularly the carbides, are separated by cooling, its homogeneity is increased by the addition of a little Fe sulfide during fusion.—A. P.C.

**A-16 Simple method for the analysis of bearing metals and similar alloys.** G. Oosterheld and P. Honig-

ger, *Helvetica Chim. Acta*, **2**, 398-416, (July 1st, 1919). *Chimie et Industrie*, **3**, 319, (March 1920). 1 g. of the alloy is dissolved in 20 cc. of boiling conc. H<sub>2</sub>SO<sub>4</sub>, the Sn going into solution as Sn(SO<sub>4</sub>)<sub>2</sub> and the Sb as Sb<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>. The solution is diluted to 100 cc. and 5 cc. conc. HCl added. The Sb is titrated with 0.1 N KBrO<sub>3</sub>, using methyl orange as indicator; the end point is marked by the decolorization of the indicator. The PbSO<sub>4</sub> is filtered off on a tared Gooch crucible, ignited at about 600 C, and weighed. To the filtrate add 50 cc. of conc. HCl and 9 g. of Zn filings in 3 portions. Heat to redissolve any precipitated Sn, cool, add KI, and titrate with KBrO<sub>3</sub> using starch as indicator. The stannous salt is oxidised before the I is displaced, which occurs before the antimonious salt is acted upon by the KBrO<sub>3</sub>. Cu is determined on a separate portion of the sample by means of KI and Na<sub>2</sub>S<sub>2</sub>O<sub>4</sub>. The action of the various compounds present is studied, and a simplified form of electrodes is described.—A. P.C.

**M-0 Fighting fire losses.** Paper, **26**, 635, (1920). Two-thirds of the fires suffered in 1919 were preventable. As the cost of prevention is nothing compared to the losses sustained it is the highest form of economy and good business to instal every apparatus that lessens fire danger. It is even more important that the men be thoroughly drilled in the use of the appliances, as otherwise they would be practically useless.—A. P.C.

**M-0 Measuring water used.** W. F. Schaphorst. Copyright 1920. Paper, **26**, 679, (1920). Water meters and steam flow meters are of great importance for locating leaks in various parts of the system. They are practically the only way of keeping tab on the condition of turbines without taking off the casing and inspecting the blading.—A. P.C.

**M-9 The application of Marcus conveyors to chemical industries.** W. Venator, *Chem. Ztg.*, **43**, 351, (June 12, 1919). *Chimie et Industrie*, **3**, 321, (March 1920). This conveyor was invented by Marcus of Cologne, and can be used for transporting a large variety of materials. It is composed of a trough supported on rolls which has a uniformly accelerated for ward motion and uniformly retarded return motion, which is obtained directly from the motor or else by means of special gearing. At each stroke the material advances about 160-200 mm. (6.3"). The trough rests on guides or supports, spaced about 3.5 m. apart, the friction being reduced by means of rollers. Some of these conveyors can deliver up to 350 t. of coal per hour.—A. P.C.

**R-6 How to increase production and lower costs by the balance of work.** William D. Hemmerly, Paper, **26**, 784-7, (1920). A description of the great advantages to be gained by using the balance of work system which shows at all times the balance between the work on hand and the available capacity of the mill or factory.—A. P.C.

**R-12 How to find costs by proper distribution of overhead expense.** F. H. Elwell, Prof. of Economy, Univ. of Wisconsin, Paper, **26**, 779-81, 792, (1920). A discussion of the importance of a proper distribution of overhead expenses in arriving at the true cost, and a description of one system of distributing which will give proper results.—A. P.C.

**R-13 Convention of the Cost Association.** Paper, **26**, 777-8, 791, (1920). Account of the Convention held in New York, May 1920.—A. P.C.

# PULP AND PAPER NEWS



The Don Valley Paper Company's mill, at Toronto, which was closed for a few days owing to the improvements that are being made, has resumed running but will be hampered in production for another week until the work is completed.

Mr. H. B. Donovan, Sales Manager of the Canada Paper Company, Limited, has been laid up at his home in Oakville for a couple of weeks. His many friends in the paper trade will hope for him a speedy recovery.

Mr. J. A. Bothwell, General Manager of the Brompton Pulp and Paper Company at East Angus, Que., has sailed for home on the S.S. Lapland, and is expected to land at New York, along with his wife and daughter, on Saturday. Mr. Bothwell has been away for several weeks, and while in Europe visited the pulp and paper mills in Norway and Sweden.

Mr. Donald MacLean, late Toronto manager for the E. B. Eddy Co., Ltd., was in Montreal this week on business.

Mr. W. L. Bird, General Manager of the recently organized Fort William Paper Co., Limited, was in Toronto this week on a visit to the head office in the Bank of Hamilton Building. Speaking of the progress being made on the new plant at Fort William, Mr. Bird said that not only his own enterprise but the pulp and paper industry generally was being hampered in its development in the north and west by the shortage of labor. While it is known that there are quite a number of men out of work in Ontario, particularly in the automobile trade, so far it has seemed impossible to secure a movement of unemployed to the big pulp and paper centres and for this reason building operations are being held up. It is likely that an aggressive campaign will be launched shortly with a view to transferring the unemployed element to the districts where they are needed.

Mr. J. G. Gibson, secretary of the Spanish River Pulp and Paper Mills Company, Limited, has returned from a visit to the Espanola mill of the company.

The Border Cities Sun, a new morning newspaper, has arisen at Windsor. The paper is issued by W. F. Herman who is also owner of the Border Cities Star.

The announcement was made in Toronto this week that John M. Imrie who for some years has managed the affairs of the Canadian Daily Newspaper Association had purchased for himself and several associates the Hamilton Daily Times, the Hamilton Semi-Weekly Times, the Times job printing plant and the business of the Canada Ready Print Co. The new owners have already taken possession and the business is being carried on under Mr. Imrie's name pending the incorporation of a company. The Hamilton Daily Times is one of the oldest newspapers in Canada, having been established in 1847 as a weekly newspaper.

A dinner was tendered at the Arts and Letters Club this week to Mr. Peter Donovan, who is leaving the editorial staff of Saturday Night to take a position on

the London Daily Express, the gathering being presided over by Mr. Augustus Bridle of the Canadian Courier. Mr. Donovan leaves shortly to take up his new duties in the British metropolis.

Mr. J. Vernon McKenzie has been appointed to succeed Mr. T. B. Costin as editor of MacLean's Magazine in Toronto, Mr. Costin having received the appointment of managing editor of the Ladies' Home Journal. Mr. McKenzie has been for the past year Canadian Trade Commissioner at Glasgow, Scotland. He served in the R.A.F. during the war and was wounded in a crash just before the armistice. He has worked on the Montreal Star, Ottawa Journal and several Toronto papers.

The organization of the Fort William Paper Co., Limited, has been completed, with the following serving as the board of directors: John G. Sutherland, Dayton, Ohio; Lieut.-Col. T. Gibson, Toronto; W. L. Bird, Fort William; W. N. Hurlburt, Dayton, Ohio, and J. G. Gibson, Toronto. The President is Mr. Sutherland and the vice-president is Lieut. Col. Gibson, with W. L. Bird as general manager and treasurer. J. G. Gibson will act as secretary and assistant manager. The head office of the company will be in the Bank of Hamilton Building, Toronto. Construction work on the new mill is now progressing. The first unit will be a groundwood mill with a capacity of 120 tons of ground wood per day.

The investigation being conducted by the Ontario Government into the methods of granting and selling pulpwood and timber limits in Ontario's vast timber lands is revealing some very loose transactions on the part of the old administration, particularly the old Crown Lands Department. At the probe in Toronto this week Albert Grigg, ex-M.P.P. and Deputy Minister charged in his evidence that Hon. G. Howard Ferguson, ex-Minister of Crown Lands, was responsible for the granting without competition of pulp cutting rights for 30,000 cords in Heale Township and adjacent extensions. The Port Arthur Pulp and Paper Company were the favored ones. That Mr. Ferguson also acted contrary to the statutes in opening certain areas for cutting pulpwood after same had been withdrawn from prospecting was also intimated by the Commissioners. Further evidence was submitted relative to letters missing from the official files. Part of the examination of Mr. Grigg was held up owing to inability to locate a letter from Samuel Marks to Mr. Ferguson bearing on abuses reported to the department by him.

In furtherance of the object of securing large pulp and paper mills for Kenora, Peter Heenan, M.P.P., and George A. Toole, Mayor of that town, waited on the Ontario Government this week and urged the necessity of ratifying the agreement between the town of Kenora and E. W. Backus of Minneapolis and others, thereby protecting the interests of the town by adding the pulpwood and timber resources of the English River watershed, with those of

the Lake of the Woods and granting the White Dog Rapids power to the company named in the agreement. The deputation are averse to the English River limit being put up for tender, but want the Government to support the agreement ratified between E. W. Baekus and the town of Kenora, which was voted upon in August and assented to by the ratepayers.

The current issue of the Canada Gazette contains notice of the incorporation of the Lake St. John Pulp and Paper Company, Limited, with head office at Montreal, and with an authorized capital of \$4,000,000, of which notice was given last week. The company is authorized to carry on in all its branches a general lumber, timber and pulpwood business. The incorporators are J. O. Carss, F. W. McKinnon, F. W. Fee, J. L. MacKenzie and Charles Patton, all of Ottawa.

Mr. Clarence P. Robinson, formerly connected with the Mill Supplies Dept. of Parsons & Whittemore, Inc., New York, has associated himself with Daniel M. Hicks, Inc., 200 Fifth Avenue, and has assumed the management of the department embracing pulps, chemicals, casein, clay, colors, wires, felts, etc. Mr. Robinson was for over 12 years connected with the Cherry River Paper Co., at their sales offices in Philadelphia, as well as at their mills in Richwood, W. Va.

The Jeffrey Manufacturing Co. has opened a new office at 1108 Marine Trust Building, Buffalo, N.Y., which will be in charge of Mr. H. W. Scott, a man of long experience in sales and engineering work.

Mr. O. A. Porritt, who has for some time been mill manager and director of the Canada Box Board Company is resigning from his administrative connection with the company, but continues as a member of the Board of Directors.

The National Association of Purchasing Agents is to hold its annual convention at the Congress Hotel, Chicago, October 11-13. Among the subjects on the program are: Buying Through Specifications, Stabilizing the Dollar, and Safeguarding the Purchase of Chemicals. Delegates will visit the packing houses of Chicago and the Great Lakes Naval Training Station.

Work is going ahead in good shape on the new time office building and also on the club house of the Brown Corporation at La Tuque, P.Q.

The pulp wood is reported coming up from the river in good shape, and with the help of the continuous barking drum is going to the pile very clean.

#### HOLLOWAY TO MANAGE HAMMERMILL WOODLANDS.

It was recently announced that the Hammermill Paper Company of Erie, Pa., had purchased pulpwood lands in Quebec. This area consists of the railway subsidy lands which the Matane Lumber and Development Company obtained from the Canada & Gulf Terminal Railway Company and consists of approximately 133,000 acres. The sale also included the mills, river, works, etc. It is reported that the price was approximately \$2,000,000. Mr. E. S. Holloway who has been with the railway company from the beginning, except while recently overseas, has been retained by the Hammermill Paper Co., as manager of their pulpwood operations. It is understood that the Hammermill Company will operate on a large scale this coming winter.

#### BOOK REVIEW.

A MANUAL OF THE TIMBERS OF THE WORLD, THEIR CHARACTERISTICS AND USES. By Alexander L. Howard. London: Macmillan & Co. 30s net.

The object of this work, as stated in the preface, is "to meet a distinct want for a clearly-arranged handbook which shall contain information concerning all the timbers encountered in commerce, including those which have only of recent years appeared in the European market. The aim has been to treat the subject from its commercial, technical, and industrial aspects."

The main portion of the book consists of a catalogue of timbers, beginning with *Abay*, a wood much resembling mahogany, that comes from San Domingo, and ending with *Zizyphus Jujuba*, a wood not unlike the black walnut, which grows in India. Between these extremes are descriptive notes of some 450 timbers, illustrated in many instances with excellent photographs. The notes give careful descriptions of the woods, their colours, and markings, and indicates the various uses to which they are specially adapted. To carry out this work as effectively as it is here done requires an immense amount of experience. Mr. Howard has been connected with the timber industry for over forty years, and in most instances he speaks from personal knowledge of the merits and characteristic qualities of the materials described; in other cases he quotes from high authorities whose names he gives.

It will be seen at once that a work of this kind will prove of the utmost value to all whose business it is to study the uses of different timbers. As the book is arranged alphabetically reference is rendered very easy. If one might make a trifling suggestion it would be that in future editions the names of the trees should be printed at the top of the pages on which they are described, as is usually done in the case of dictionaries.

In addition to the actual facts set forth in the catalogue, Mr. Howard discusses incidentally many points of great interest. He mentions, for instance, the tendency to demand Austrian oak in British specifications, and we are glad to find in him a stalwart champion of the English tree. A useful section is devoted to the artificial seasoning of timber, where he states the interesting fact that he had had experience of some very large timber dryers in Finland used to fulfil certain conditions, one of which was "to turn out the dry timber without discoloration, so that it could be sold in England and elsewhere as "Guaranteed NOT Kiln-dried."

We note with pleasure that particulars are given of the properties of several Indian timbers, such as Alexandrian Laurel (*Cadophyllum Inophyllum*), which hitherto have been little known in this country. Any one who visited the Empire Timber Exhibition, recently held at Holland Park Skating Rink under the auspices of the Department of Overseas Trade, must have been greatly struck by the exhibits of these woods which were prepared by Mr. Howard for the Government of India. Attention was drawn to these in the *Journal* of July 16th (p. 567), and we can only repeat the hope there expressed that these timbers will become more and more widely known among our furniture makers.—From the *Journal* of the Royal Society of Arts.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, September 18. Speaking generally, paper trade conditions remain unchanged, with the mills all extremely busy and deliveries unimproved. Aside from a rearranged schedule of resale prices for kraft paper, issued by the Canadian Paper Trade Association, there have been no changes in pulp and paper prices as they have existed during the past week or two. The mills report that they have orders enough ahead to keep the machines running until well on to the end of the year, and jobbers say that the volume of business they can do is only limited to the shipments they can get in from the mills. There is still a great shortage of raw material and paper makers are not only compelled to pay long prices for their pulp, but in many instances are unable to get anything like the amount required to meet their needs.

### Box Board.

Although, as stated last week, the box board industry is going through a somewhat quiet period owing to the closing down of some of the factories using cardboard and other boxes, such as the shoe manufacturers, it is stated that this is only temporary, and the mills say the effect is barely perceptible and they are still considerably behind with their orders. Prices for the various lines of board remain firm and unchanged and the trade is looking for a bigger output soon as the result of the program of improvements and expansion being carried out by the Canada Box Board Company. The ground wood plant of the company at Frankfort is expected to be in operation some time in October and changes are well advanced at the Frankfort, Montreal and Campbellford plants, which are expected to be completed shortly, when the tonnage will be considerably increased.

### Wrapping Papers.

There has been no let-up in the big demand and supply shortage in wrapping papers. A visit by a Toronto jobber to the mills this week revealed the fact that it is not easier to pick up shipments of paper at the mills now than it has been all summer. This jobber has been in the habit of going direct to the mills in his effort to keep up his stock and meet the wants of his customers, but he admits that even this plan does not always meet with success and that it is with the utmost difficulty that he can pry a carload or two out of the mills on the occasion of his periodical trips. There have been no changes in the price list during the past week.

### Coated Papers.

Mills doing business in the coating line report that they are experiencing great difficulty in getting adequate supplies of body stock which is only another indication that paper is scarce. However, the mills are not looking for business as they are booked up till about the end of this year, although the paper shortage means that they can only operate one shift, whereas their manufacturing demands would more than justify continuous operation could they get the body stock. No. 1 coated is selling at 20c from the mill to the consumer and No. 2 is quoted at 19c. The mills

say that they are well supplied with everything in the way of ingredients, fuel, etc., and that the only thing they need is more paper to run through the coating machines.

### Manilas

Mills manufacturing manila paper report a big demand for the product. They are really getting more business than they can attend to and the tonnage is being seriously affected by the difficulty in securing adequate supplies of pulp. The last tag manila made at one of the mills was sold at 12½c, but it is predicted that from 14c to 15c a pound will be the ruling figure for stock now being turned out. One mill was in receipt of an enquiry from a dealer this week who wanted two carloads of tag at a price to be fixed by the mill anywhere in reason. What he was chiefly concerned about was the matter of delivery. Nothing could be guaranteed along this line and so the deal was off. It was impossible for the mill to make any promise as to the date of delivery by reason of the fact that they had no guarantee that the raw material for the making of the paper would be forthcoming.

### Tissues and Toilets

While the prices of tissues and toilets remain unchanged the mills say that the increased freight rates, which represent about two per cent in excess of the present selling prices, may result in a further increase in the prices of these two lines of paper, although as yet the two per cent has been absorbed without revising the price lists. Manufacturers report a well-sustained volume of business but they are unable to get pulp supplies in adequate quantities, particularly bleached sulphite.

### Book Paper and Bonds

Although reports from the mills indicate that the production of book papers is increasing somewhat, jobbers say that deliveries are not coming through any more freely. Some of the mills are at the present moment booking orders for January and even February delivery and orders booked months ago are only now being filled. Representatives of American mills in Toronto this week reported business as extraordinarily brisk on the other side of the line, one salesman stating that he was selling enough paper in one day to keep his mill going for a day and a half, which means that more orders are being taken than production can very well take care of. Another representative of a bond paper mill stated that his mill could keep running for over two hundred days on back orders without a single new order being booked. These statements are fairly well borne out by the difficulty being met with in getting in certain lines of paper imported into this country from across the line.

### Kraft Papers

The Canadian Paper Trade Association has sent out a circular advising the trade of a revision in the resale prices on kraft which apply to Ontario, with the exception of Port Arthur and Fort William, and to Quebec. The prices are as follows: Car load lots of 20 tons delivered in one lot and invoiced as one lot



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**SOLE AGENTS in the United States, Canada, Mexico and Cuba for  
Finnish Cellulose Association, Helsingfors, Finland**

comprising all and every Sulphite, Sulphate and Kraft pulp mill in Finland. Manufacturers of superior grades of Bleached and Unbleached Sulphites, Easy Bleaching Sulphates and Kraft Pulps.

—ALSO—



Trade Mark

**SOLE AGENTS in the United States, Canada, Mexico and Cuba for  
Finnish Wood Pulp Union, Helsingfors, Finland**

a combination of the foremost Ground Wood Pulp and Board Mills in Finland, makers of various kinds of boards and dry and wet Brown and White Mechanical Wood Pulp.

Get the most for your money by getting next to our qualities and prices!

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**PULP**

**Lagerloef Trading Company, Inc.**

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INQUIRIES SOLICITED.

\$12.50; ton lost, \$14.25; less than ton-lots, \$15.00. The following prices apply to the Maritime Provinces: Car lots of 20 tons delivered in one lot and invoiced as one lot, \$13.00; ton lots, \$14.75; less than ton lots, \$15.50.

### NEW YORK MARKETS.

New York, Sept. 18.—(Special Correspondence).—The paper market continues to be attended by a strong undertone and yet the freer movement of supplies from mills to consuming centers acts to eliminate a good deal of the keenness of demand for the reason that larger amounts of most kinds of paper are becoming immediately available to users. Probably the feature of the situation at the moment is the increased inquiry from consuming quarters concerning future shipments of paper. Printers, publishers, department stores and other large buyers evidently are not waiting until they are actually in want of fresh supplies before placing orders, presumably having found that this policy does not pay them under prevailing circumstances, and are looking to cover requirements as far ahead as they can obtain promises of deliveries. Papermakers in consequence are being given ample orders to keep them engaged, aside from the tremendous effort necessary to fill present commitments, and as far as actually available supplies from mills go, there is scarcely any more paper to be had now than there was several months ago or before the customary mid-summer slack period set in.

The book paper market is very firm. Prices show no indication of easiness, on the contrary the tendency is distinctly upward and mills in frequent cases refuse to issue any quotations at all, being sold as far into the future as they care to be. Jobbers are securing 24 cents and higher for No. 1 coated book, while about the lowest price named by mills to the distributing trade on this grade of paper is 21.50 cents. Machine finished book is quoted in the vicinity of 18 cents a pound and there is practically no mill which will stipulate definite dates for delivery excepting in cases where regular contract customers need small tonnages to fill in supplies. Everything would seem to point to a continuance of strong conditions in the book paper branch of the market for a long time to come. Magazines are issuing larger editions than ever before and there is no question that they are being offered advertising warranting the printing of still larger issues if they had the necessary paper to run on.

The newsprint market is steadily tightening up as the fall draws near. Daily newspapers are consuming increased amounts of paper and many of them have

resumed announcing each day the number of columns of advertising omitted. One of the leading New York morning papers is leaving out an average of between thirty and forty columns of advertisements in every issue, and one morning this week omitted no less than sixty columns. This situation goes to show that the mid-summer slackness in the newspaper field has been removed, and it is but logical to expect as the season progresses and pre-holiday advertising campaigns get under way, publishers will be called on to use more and more print paper. Spot lots of newsprint are selling at from 11 cents upward at mills for standard rolls, and there have been sales of small lots by jobbers reported at higher than 14 cents. Sheet news to the transient trade is bringing around 13.50 cents per pound and on contract 7.50 cents at mills.

Fine papers are in a firm quotable position. Manufacturers are repeatedly finding it necessary to advance prices on many lines of bond and ledger papers, and quotations are so irregular and on such a broad range that it is indeed difficult to arrive at anything definite in the way of market values. About the cheapest bond paper obtainable costs 20 cents a pound and very little of this grade or of any line ranging up to 30 cents is to be had. Buyers naturally are concentrating their purchases on the lower-priced lines, with the result that mills are sold up far ahead on such grades.

Coarse papers rule quotably steady although demand is not as pointed as it was recently. Jobbers are getting larger supplies from mills as a result of better transportation conditions and are therefore keeping consumers better provided with stock. Boards are firm in price and are moving in consistent fashion. No change has developed in quotations, plain chip board being priced at around \$115 a ton and filled news board at \$125 and higher.

GROUND WOOD.—From all indications, the softening of quotations on mechanical wood pulp during the past several weeks has been due primarily to the offering of certain lots of Scandinavian ground wood by importers at concessions from the prices ruling. Efforts to learn whether domestic producers have lowered prices are unavailing and it appears that mills and dealers in the States, as well as in Canada, are maintaining quotations excepting in infrequent cases where they have desired to move specific tonnages of pulp. Quotations down to as low as \$125 per ton are mentioned in some corners of the trade, yet buyers tell of trying to locate pulp at this basis and of failing to do so. As far as can be ascertained, domestic manufacturers continue to name in the vicinity of \$140 for

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prime spruce ground wood for prompt delivery, and even higher prices are being secured. There are no visible signs of available supplies being any heavier and the trade generally looks for the market to tighten up during the fall when consumption mounts and when grinders find themselves without their usual surplus stocks to draw on.

**CHEMICAL PULP.**—There is little change of note in the chemical pulp market. If anything, the tone is a bit softer, this being due to the larger quantities of sulphite and kraft pulp coming in from Scandinavia. Thus far, however, the increased foreign supplies have effected scant alterations in prices, and pulp men lay emphasis on the fact that it is but a customary condition at this period of the year for imports to increase for the reason that manufacturers in Sweden endeavor to ship out as much pulp as possible before the Baltic closes for the winter. Conservative trade factors nevertheless say that should importations keep up at the present rate it is possible domestic pulp values may be affected, and consumers apparently are adopting the same view and are mostly buying only as the need for supplies presents itself.

Imports of pulp at the port of New York this week included 1,820 bales of chemical and 1,000 bales of mechanical from Christiania, and 14,317 bales of mechanical from Canada.

**RAGS.**—The papermaking rag market evinces little change and no particular feature. Demand is still mainly for whites and both new and old white rags are bringing prices far above a parity with those prevailing on other grades. Interests other than papermakers are reported buying up sizable quantities of new white shirt cuttings and paying close to 30 cents a pound, whereas the average paper mill refuses to go beyond 25 cents and appears to be getting at least some of these rags. Old No. 1 repacked whites are selling at from 15 cents upward, with choice packing commanding 18 cents, while repacked thirds and blues are freely available to mills at 4.50 cents at shipping points. Roofing rags are holding steady at a quotable basis of around 2.25 cents for No. 1 packing, and although there is a fair demand, feltmakers are not buying in a way to cause prices to rise.

**PAPER STOCK.** The strength of prices on waste paper and the continued demand for this commodity seems to bear out the maintenance of wood pulp values, and the contention of pulp men that supplies are limited. Mills are absorbing fairly large tonnages of old paper of practically all kinds and are paying re-

cord-breaking figures—in some cases beyond what they are obtaining relative grades of rag stock for. Mixed paper, for example, is fetching higher prices than roofing rags, a situation which veterans of the trade say they never have seen before. Flat folded news is the one big item in current trading and consumers find it necessary to pay around 2.75 cents a pound at shipping points to get reliable packing of this grade. Shavings are strong and are generally quoted at 9 cents or more for No. 1 hard whites and at about 8.25 to 8.50 cents for No. 1 soft white shavings. Old books and magazines are bringing 3.25 cents at shipping points, old kraft paper 6.50 cents and ledger stock close to 5 cents per pound.

**OLD ROPE AND BAGGING.**—The old bagging market is in a sluggish condition, consuming demand being at a low ebb and buyers obtaining supplies at virtually any figures they care to bid. No. 1 scrap bagging is freely available at 2.50 cents a pound, No. 1 gunny at 2.75 cents and roofing bagging at 1.50 cents. Old manila rope is quotably steady at 6.25 to 6.50 cents at shipping points and is moving in fairly consistent fashion.

#### MAY CUT B. C. PULPWOOD FEES IN HALF.

Following an inspection of the pulp and paper plants on the Coast, Mr. Pattullo, Minister of Lands for British Columbia spoke of the amended legislation appertaining to timber limits suitable for pulp-making. In order to encourage the establishment of more plants, permission may be granted for the cutting in half of the license fees where the department considers the limits better suited for pulp and paper making than for lumbering. The minister stated that this change was resulting in greatly increased interest among manufacturers, with the immediate prospect of the establishment of one or more plants in the near future.

Prince George is in the limelight at present as the prospective centre of pulp-making on a large scale. The immense stands of spruce and balsam near that city have been investigated this summer and negotiations with the timber-holders carried on.

#### KILLED AT RIMOUSKI PULP MILL.

An unfortunate accident occurred at Rimouski, P.Q., Sept. 16, when Mr. Joseph Collin, aged fifty-five years, while employed at the firm of Price Bros., was killed when he was caught in a chain used for drawing logs from the water and his body literally torn to pieces.

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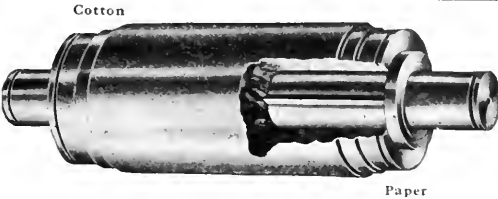
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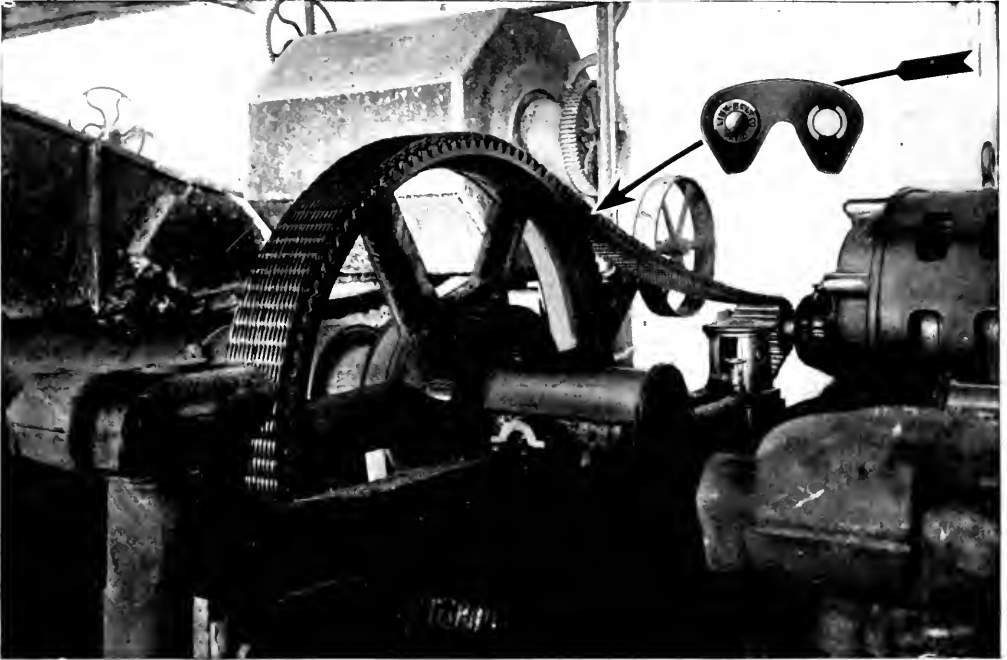
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# Pulp and Paper Magazine

## OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., Sept. 30th, 1920.

No. 40

### TABLE OF CONTENTS

#### Editorials:

Taschereau's good beginning	1013
Not afraid of the coal strike	1013
Does changing a machine infringe a patent?	1011
A fine calendar	1014
Cobwebs	1014

#### Special Articles:

What the pulp and paper industry is doing in educational work	1015
Theory of the preparaton and recovery of soda and sulphite liquors	1019

#### Miscellaneous:

The bleaching of paper pulps by ozone	1018
Sulphite alcohol successful motor fuel	1018
How Scandinavia looks to Canadians	1025
What T.A.P.P.I. did at Saratoga	1028

#### News of the Industry:

Your employer	1023
Spanish River to make 1000 tons	1021
Western Canada Pulp and Paper Company, Ltd., now in operation at Port Mellon, B. C.	1024
Three Rivers Pulp and Paper Co.	1021
Quebec Lumber Co. to grind wood	1024
Soda pulp mill for Howard South	1024
British Trade News	1027
United States notes	1030
Pulp and paper news	1031
Tribute to H. C. Courtney on departure	1032
We are wasting too much timber?	1032
Tariff protection best for Canada	1032
The patriotism of peace	1036

#### The Markets:

Canadian trade conditions	1033
New York markets	1034

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Official Journal of the Technical Section of the Canadian Pulp and Paper Association.

J. NEWELL STEPHENSON, M.S. Editor

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15



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# EDITORIAL



## TASCHEREAU'S GOOD BEGINNING.

The Premier of Quebec has announced a campaign against three of the principal factors in the problem of public health — tuberculosis, infant mortality, and blood poisoning. This is a most laudable undertaking and should have the support of everyone in the province. It should even spread to other provinces and become a strong movement of Dominion-wide extent. Mr. Taschereau has shown a clear appreciation of other public problems, such as forest policy and doubtless has in mind the various and, in some cases, insidious, factors in the health problem.

To emphasize, if we may, a couple of contributory causes in connection with the objects of the Premier's campaign. First and foremost is the matter of liquor. Strong drink has absolutely no place in modern civilization, except in rare cases for medical use, and even wine and beer may be a serious menace to both health and morals. Intemperance is an important contributory factor in the damage done by tuberculosis and is a prolific cause of infant mortality. The family of intemperate parents is almost sure to be undernourished and neglected. The alcoholic is an easy mark for tubercle bacilli. The plea of "gentlemen" that they know how to use liquor gives them a special privilege is utterly false. One civilian has no more right to carry a dangerous weapon than another. The man who thinks so is a social menace, and not entitled to the privileges of citizenship or even of civilization. He is a hypocrite. The same and worse applies to the person who condones commercialized vice or contributes to the social evil in any way. And that is where our condemnation of beer and wine comes in. They do contribute to this most damnable thing. The Premier knows it; everyone who reads, listens, looks, and thinks, knows it. The purveyor of booze and iniquity cannot escape being despised by his fellows, even by those he serves. Vice, alcohol and indifference are the Central Powers to be fought in this campaign. God alone knows how many babies never live, how many die in infancy, how many are blind, insane or infirm, because of vice which thrives principally because of the greed of blood-suckers, the callousness or cupidity of politicians, and the indifference of the public. Most certainly the problem is one of education. But education of the people to their responsibility pre-supposes earnestness, courage, and determination on the part of the government. Some public officials unfortunately command no confidence whatever.

We have used some strong language — almost our whole vocabulary — and we mean every word of it. We are ready to support such a campaign to the last ounce of our energy and the last drop of ink, but we want to know that Premier Taschereau means to **make war** on this whole combination of enemies of public health and welfare.

## NOT AFRAID OF THE COAL STRIKE.

The pulp and paper mills of Sweden, while to some extent using black diamonds, have largely discontinued the use of this expensive luxury imported mostly from the mines of Britain and are using hard wood. Mr. J. A. Bothwell who is just back from that country says that Swedish pulp mills and railways have but little to fear from the threatened coal miners' strike in England. He estimates that there must have been nearly two million cords of hard wood stacked along the railways that he travelled on.

One of the important possibilities which may prove a fortunate outcome from the necessity for reverting to wood fuel is the effect on the future forest. The most valuable tree in Sweden, as in Canada, is the spruce, which is the basis of the great pulp and paper and lumber industries. The forests of Canada are seriously suffering because hard woods are increasing at the expense of the soft woods which are at the same time being dwarfed because of the dense shade of maple, birch, etc. Foresters in Canada consider the problem of removing the hard woods and utilizing them to be one of the most difficult features of Canadian forestry. Apparently the Swedes have had the solution of the problem forced upon them. From what is said by Mr. Bothwell on another page it appears that Swedish mills are able to bring these hard woods economically to their plants. It would be interesting to know the method of transporting them, and whether a preliminary drying is employed in order to increase the floating quality of the wood. Whatever regret there may be in having to use wood fuel the resulting effect on the forest will one day be appreciated. It practically means a reversion to clear stands of coniferous wood. If such a result could be accomplished in Canada it would be putting millions of dollars into the pockets of future Canadians and would be one of the greatest factors in stabilizing the cost of production of wood pulp and lumber.

Despatches that have come over from time to time during the war gave the impression that the Scan-

danavian mills were consuming their stocks of pulp-wood. Mr. Bothwell's report, however, seems to indicate that while they were overcoming the coal shortage they were at the same time practicing a fundamental principle of scientific forestry. The speed of railway trains is practically the same as in Canada and with the cost of fuel on anything like an equivalent basis as compared with coal, the use of wood has the additional advantage of practically eliminating the ash handling problem, indeed the wood ashes are actually a source of income. We don't want to see Canada so completely shut off from coal supplies as would make us absolutely dependent on wood fuel, yet the difficulties which have thus been met successfully by Sweden might be studied with profit by Canadian foresters and lumbermen because of its important bearing on the conservation of our soft wood forests.

---

#### DOES CHANGING A MACHINE INFRINGE A PATENT?

Among the advertising pages of the Pulp and Paper Magazine, beginning last week, there is a discussion of a matter that is of more than limited interest to the parties directly involved in the dispute. The magazine regrets that it is sometimes necessary to air such a matter on our pages, because of the spirit of friendliness that is characteristic among those interested in the industry. When the copy was received we were inclined not to publish such an advertisement. However, on studying the whole matter it seemed to bring up a point that is of considerable interest to all pulp and paper mills. It is a question of how far a concern is permitted to make changes in machinery without infringing on anybody's patents. Both the concerns involved are good friends of The Pulp and Paper Magazine and we are good friends of theirs, and have hopes of seeing the dispute arranged in an amicable manner.

---

#### A FINE CALENDAR.

One of the best agencies that has been devised for promoting interest in the Safety-First Movement has proved to be the "Safety Calendar". This idea was begun some years ago in the United States and last year it was felt that the Safety Movement in Canada warranted the institution of a Canadian calendar. The attempt last year was largely an experiment but proved so entirely successful that it is being repeated this year on a somewhat larger scale. We have been favored with advanced proofs of the cartoons that will appear on the monthly pages and they are certainly well executed drawings of excellent ideas. The cartoon has been found one of the best ways of presenting an idea and the combination in the 1921 calendar promises very successful results.

The Safety Movement is not confined simply to the

mill but must be supported and encouraged by carrying the Safety Idea into the home. This is very effectively done by distributing calendars so that each employee may have one to take home. Even if he can read little or no English the picture tells a story which is understood by every member of the household. This continual suggestion and warning with regard to danger points is most helpful in developing a safety thinking community. In spite of increases in cost of production there is very little change in the cost of these calendars and every pulp and paper mill in Canada should lend its hearty support to the cause of Safety First both as a patriotic and a personal proposition by ordering at least as many calendars as there are homes represented in the plant. They may be had at the office of the Ontario Pulp and Paper Makers Safety Association, 129 Spadina Avenue, Toronto, at \$3.00 for two hundred or less and \$2.50 each for more than two hundred. Orders should be sent in promptly as the number of orders received early will be a great assistance to the Association in gauging its work.

---

#### COBWEBS.

It appears that prices are declining in lines where the combination of decreased buying together with either a past record of excess profits or an accumulation of stocks for speculative holding has made liquidation of goods on hand advisable or necessary. In lines where steady or special demand prevents accumulation of goods, or where increase in labor charges offsets and decrease in cost of raw material, we fail to see any likelihood of a drop. Some manufacturers may be philanthropic enough to try it, but there are not enough of them to make much of a crowd. Gradual reductions, however, are to be expected and hoped for.

---

One of the most complete community buildings we have heard of is that at Rothschild, Wis., the home of the Marathon Paper Mills, Co., and described in "The Marathon Runner".

Speaking of the Marathon Company, they have started a long service prize system, whereby an employee gets an additional one percent. of his current year's salary or wages for each year of service until the prize money reaches ten per cent.

---

"We have a 'hunch' that if demands for advertising fell to a point where publishers could not afford to buy all the newsprint offered at present prices, prices would come down a peg, but we do not expect paper mills to cut prices in order that cheaper paper to their customers will merely mean higher profit to some one else.

---

If Adam had not eaten the apple, who would have invented work?

# What the Pulp and Paper Industry is Doing in Educational Work\*

Mr. President, and Friends of Safety:

I greatly appreciate the honor of being invited to speak to such a gathering as this on a subject which has been of great personal interest to me for many years, although I should be at home at work on the text books which are to be used in educating pulp and paper makers rather than here talking about it. The need of some opportunity for young men to learn more about the business of paper making was impressed upon me about sixteen years ago when the frequent answer to my numerous questions asked of our Scotch machine tender was "Well now, Sliver, if I told you all I know, you would know as much as I do."

Since that time a great deal has been learned about paper making, many improvements have been made in machinery and processes and many new inventions have made the work easier and more efficient. These machines and processes have been described more or less clearly in patent office records and occasionally a process or machine is the subject of an address at some meeting or a contribution to a trade periodical. Information on the equipment of the industry is therefore fragmentary and scattered and, although several very good books have been written, a comprehensive discussion and explanation of the fundamentals underlying the construction of machines and operation of processes is practically non-existent in convenient form in English. A movement instituted jointly by the technical men of the industry in Canada and the United States and financed by the manufacturers is now in progress which should go a long way toward the remedy of this condition.

## University Training.

In February 1913 the first course in Pulp and Paper Making on this continent was conceived by Dr. R. H. McKee and offered by the University of Maine. This was given by Prof. A. G. Durgin, now with the Spanish River Pulp & Paper Mills, on the Manufacture of Pulp. In the fall of that year the speaker joined the staff, courses were organized in Paper Making and the University shortly had built up a department giving instruction in ten pulp and paper courses, four of which involved practical work in the laboratories which were equipped with pulp and paper making and testing apparatus.

The University of Michigan some time later began post-graduate work in pulp and paper. The University of Wisconsin is, of course, close by the Forest Products Laboratories, but we are not aware that undergraduate instruction has been given in pulp and paper subjects. The same situation is true with regard to McGill University and the Forest Products Laboratories of Canada, at Montreal. Several colleges include a few lectures on these subjects in the course in Industrial Chemistry. This fall the College of Forestry of New York State is offering for the first time, a consecutive course in Pulp and Paper Manu-

facture. This is based naturally on wood as raw material. Both the University of Maine and the New York State College of Forestry have attempted short courses especially for the man in the mill. They have not been entirely successful.

It will thus be seen, however, that the man who has the time, means and ambition to prepare himself for the technical or engineering departments of the pulp and paper mill has fair opportunities for University training. The lack of schools devoted strictly to pulp and paper making is partly corrected by such means as prevail in Canada, where the Technical Section of the Pulp & Paper Association is co-operating with the universities so that students in Chemistry, Engineering and Forestry are given opportunities to engage in the summer months in practical work with pulp and paper companies.

## Vocational Education.

The more difficult and the more interesting phase of the situation, however, relates to providing educational opportunities for the man in the mill or the young man in the schools who has a leaning toward this industry as a career. There are several distinct lines along which instruction may be given, some of which have already been followed up to some extent. At least there have been several night schools in operation and there is included in the International Correspondence Schools courses a few pages devoted to this enormous industry. Besides the night school and correspondence instruction there is the opportunity for part time instruction as advocated by the Federal Board for Vocational Education and there is also the lecture series. It seems that all of these methods can and should be made use of according to local conditions. The problem is largely a local one, and cannot be satisfactorily solved without the earnest attention and a good deal of energy from the men on the spot who have the knowledge of the industry.

As far as I am aware and certainly as far as Canada is concerned, the first distinct attempt to provide for the instruction of employees of the industry was the night school organized at Thorold, Ontario, by the co-operation of the local school authorities and the pulp and paper companies in Thorold, Merrittton and St. Catharines. Classes were organized in Chemistry, Electricity and Mechanical Drawing. There was a very good attendance and great interest was shown by the students. Progress was encouraged by the offering of prizes and the proficiency of the student together with his application to study was made the basis, in some cases at least, for promotion. The following year was one when there was a great deal of sickness and attendance necessarily was affected. The interest, however, was still good, the principal difficulty being that those who had qualified in the elementary work were not offered a chance to continue with more advanced studies.

A similar school was organized at Hawkesbury, Ont., by the Technical Department of the Riordon Company. Here, again, the elementary subjects were taught and attendance and progress were reported as very satisfactory. At Sault Ste. Marie, Ontario, classes were carried on by the Y.M.C.A. with the

\*Address by J. N. Stephenson at the annual convention of the National Safety Council, Milwaukee, Wis., Sept. 30, 1920.

co-operation of the Spanish River Pulp & Paper Mills and the Algoma Steel Corporation. Here, too, the principal subjects were Arithmetic and Elementary Science. At the Spanish River Mills at Espanola classes were held for teaching English to the foreign population. This, I understand was directly in connection with the company's prominent activity in the cause of Safety First, it being realized that an essential factor in the success of the movement is the ability of the employee to understand the common language of the mill.

At Iroquois Falls, Ontario, which is the location of the Abitibi Power & Paper Co., and at Grand Mere, Que., where the Laurentide Co., is situated, courses have been given consisting of a series of what might be called popular lectures on the principal departments of the pulp and paper mill. This is being extended this year by the Abitibi Company through the preparation of a special series of papers dealing with the fundamental processes. The papers have been appearing from week to week in the *Broke Hustler*, the paper on mill news and town topics published by the company. It should be mentioned also that the Spanish River News, the weekly paper published by the Spanish River Pulp & Paper Mills has also contained a series on the story of newsprint manufacture. It will be noticed that all of these places are centres of newsprint production although the vicinity of Thorold, that is, the Niagara Peninsula, produces perhaps as great a variety of papers as could be found anywhere in the same area.

A number of mills in the United States have undertaken somewhat similar work. The American Writing Paper Company went so far as to set aside one division of their organization for instruction purposes. This phase of the work of that company has not yet, however, been entirely organized. The Kimberly-Clark Company, has also, through its Technical Department, given instruction in certain phases of the work to groups of employees. The Champion Fibre Company at Canton, N.C., are organizing their educational work for the coming winter and are planning a series of courses to be given by heads of departments in order to acquaint the men in each department, as far as his preliminary education will permit, in the fundamental principles underlying the processes and in the description of the various machines and their functions. There is much to be said in favor of carrying out the work as planned by this company. In the first place the men are listening to men they know and to men who are able to talk in their own language. Each mill will often have a sort of pet name for a very common piece of apparatus or machine part and each mill of course has its own problems. Furthermore the student is able at almost any time to ask further questions of his instructor.

This type of instruction is likely to meet with some hitches because of the inexperience of the leaders in planning classroom work and in presenting their knowledge and their ideas to the student. This, however is not by any means an insurmountable difficulty and with a little persistence, courage and patience and plenty of enthusiasm on the part of those who conduct these classes, there is bound to be a great deal of progress made both by the teacher and by the class. It is well known to educators that a person learns more about his subject through teach-

ing it than through studying it. I know that from experience.

You will have noted, perhaps, that with rather few exceptions the emphasis in the educational work has been on preliminary instruction, that is, the teaching of mathematics and elementary science. There are two reasons for this. In the first place many of the more ambitious men in the mill are the ones who have not had many educational opportunities and who find themselves handicapped in comparison with their fellows who have been through high school or even only through the eighth grade. The grown men who are now in the industry were not required to attend school to the age which is now fortunately becoming a respectable minimum for going out to work in the world. In the second place there cannot be satisfactory progress made in the study of the machinery and processes used in pulp and paper manufacture unless the student understands quite thoroughly the fundamental principles of mathematics and of science so that he may get a clear conception of the discussion of a process or the description of a machine.

#### Text Books in Preparation.

The Technical Section of the Canadian Pulp & Paper Association and the Technical Association of the Pulp & Paper Industry, formerly the Technical Section of the American Paper & Pulp Association, have since their organization, which was almost simultaneous, each had a committee on education. Until quite recently these committees have worked independently, though acquainted with each other's activities. After the school at Thorold was under way the Canadian Committee realized the serious handicap to successful vocational education in the Pulp and Paper Industry presented by the lack of a suitable text book on the subject. The matter was thoroughly discussed and when the field had been canvassed it was agreed that the problem was too big an undertaking for the Canadian committee and that inasmuch as the problems were largely common to both Canadian and American mills it was decided to have, if possible, joint action taken. A meeting was subsequently held at which all but one member of the two committees were present and a joint committee to proceed with the preparation of a suitable text book was formed. This committee has been in existence now for just two years. The program which is being followed is to prepare an elementary but comprehensive work which will enable the person interested in the industry to begin at the beginning, meaning in many cases, with arithmetic and on that foundation in mathematics and elementary science which is provided, to progress through the study of the various processes involved in pulp and paper manufacture.

The material for Vol. I, which includes this elementary instruction is prepared and a large part of it is in type though not yet printed. This volume will include Elementary Arithmetic, Applied Arithmetic, Elementary Physics, How to Read Drawings, Mechanics and Hydraulics, Elementary Electricity, and Elementary Chemistry. The material is so prepared that it will be appropriate for either class room or correspondence instruction or for reference purpose. The provision for correspondence instruction is important because of the comparative isolation of some mills and because some older men might be embarrassed in a class room. This feature, of course, applies to the whole work.



Volume 2 includes a very brief chapter on Logging; the Principal Properties of Pulpwoods; the Preparation of Wood; Mechanical Pulp; Sulphite Pulp; Soda Pulp; Sulphate Pulp; Treatment of Pulp; Bleaching Pulp; Analysis and Testing of Pulp and Raw Materials.

Volume 3 takes up the Manufacture of Paper and begins with a very brief discussion of the materials used and the history of paper making and a concise outline of the process. The following sections are then included: Preparation of Rag and Other Fibres; Treatment of Waste Papers; Beating and Mixing; Loading; Sizing; Coloring; Handmade Papers; and the Paper Machine.

In Volume 4 the Manufacture of Paper is continued and includes: Tub-sized Papers, Finishing Operations, Special Papers and Boards, Paper Testing, General Mill Equipment and an Appendix including various tables and other miscellaneous but useful material relating to paper.

It is anticipated that this work, when completed, will form the basis for many study groups and for much individual study as well as being a valuable work of reference. In order to facilitate the arrangement of what might be called a curriculum for the various classes of mills it is intended to publish the work both as bound volumes and in pamphlet form. The pamphlets are susceptible of arrangement by grouping so that, for instance, a man working in a sulphite mill, who would naturally not be directly interested in either groundwood or soda pulp, can study the pamphlets relating to Properties of Wood, Preparation of Wood, Manufacture of Sulphite Pulp, Treatment of Pulp and Bleaching.

#### Accommodation for Three Shifts a Problem.

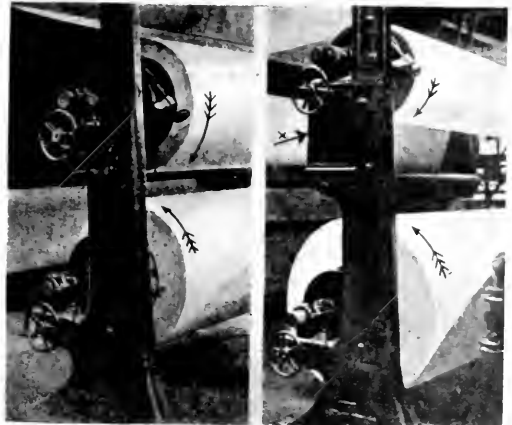
One of the difficulties in connection with organizing night classes or outside classes of any kind for paper makers, is that the majority of the men in the mill work on three shifts so that it is not possible to have a time for the class which meets the convenience of all the men in the mill. Nor will holding a class every other week quite meet the situation. Such a scheme would be bad practice anyway. It seems that the only way out is either to have one-third of the men in turn miss each class or to repeat the same lesson each time that the class meets. The latter is the scheme that it is expected will be followed by the classes at the Champion Fibre Company's plant.

This phase of the problem is one that has apparently not been given the attention it deserves, probably due to the fact that most of the instruction has been in the form of popular lectures rather than in organized classes. The division of hours is usually such that a shift begins at three or four in the afternoon, depending upon whether the work-day begins at 7 or 8 for the men working on continuous operations. The man in charge of the education work for the Champion Fibre Company anticipates having classes occupy the afternoon hours so that there will be a two-hour session available to men on the evening shift just before going to work and two hours for the men who are just leaving the day shift. This would give an opportunity for the men who had worked on the night shift to attend either class. The difficulty here would be that the men who are on day work from, say, 8 to 5, 7 to 5, etc., depending upon the length of day for the day laborer, would not have an opportunity to attend either of these classes. Some

such men might be only temporarily engaged in such work and might reasonably be expected in many cases, even if regularly so engaged, to be interested in the manufacturing processes of the mill and they certainly should be provided for. This can be done by postponing the second afternoon class until evening, when it would be available to all day workers and to two shifts of eight hour men, as well as to the townspeople.

You have probably been thinking while listening to my few remarks that I have not hit very often on the subject of what the industry is *doing* to provide educational opportunities for men interested in pulp and paper manufacture. But you Safety Men often have to organize the educational work. The subject has necessarily involved some mention of what is to be done and a few of the problems that arise in attempting to do it.

It may also have seemed a bit strange that such a topic should be introduced in a program of the National Safety Council. On this point I would say that a number of persons in the industry who are particularly interested in Safety Work, are firmly convinced that a considerable percentage of accidents is due to a lack of knowledge of the machines and of the processes used in pulp and paper manufacture. Further than this there will be no disputing the statement that most accidents are due to thoughtlessness. If attendance at classes could be expected to have but one result, that result should certainly be the gaining of an ability and, let us hope, an inclination, to think. The thinking man is the safe man, at least when his thoughts are on his work. If his thoughts are somewhere else he may really be worse than thoughtless. So it will be seen that the development of the educational work of the industry presents an excellent opportunity for the Safety Man to co-operate and by incorporating as occasion offers, hints and warnings regarding safe practices and danger points, the educational program will be of distinct value as a factor in promoting the cause of SAFETY FIRST.



Blocking up the Bearings of the Upper Reel Greatly Lessen the Danger of Being Caught in Between the Reels.

## THE BLEACHING OF PAPER PULP BY OZONE.

By J. SIMONNEAU

Translated for the Pulp & Paper Magazine from *La Papeterie*, 42, 23, Jan. 10, 1920, by A. P.-C.)

Paper pulp is usually bleached with bleaching powder or with chlorine gas. It takes 1,000 kilos of bleach at 100-105 deg. (31, 78-333.36 per cent of available chlorine) to bleach 6000 kilos of pulp. Assuming that the bleach costs 56 to 58 francs (about \$11.20 to \$11.60) per 100 kilos, the cost of bleaching would be 560 to 580 francs (about \$112 to \$116). With chlorine gas prepared according to the most modern methods, the cost of bleaching 6000 kilos (about 6 long tons) of pulp would be 510 to 530 francs (about \$102 to \$106).

A considerable decrease in the cost has recently been effected by the introduction of the Hermité process of electro-chemical bleaching. The cost of bleaching the same amount of pulp by this process is 285 francs (about \$57), a saving of 50 per cent. The use, however, of chlorine, hypochlorites, and oxygenated chlorine compounds exerts a deleterious effect on the strength of the paper, and must be neutralized by means of an anti-chlor, generally sodium thiosulphate.

Starting on the assumption that the bleaching was due to an energetic oxidation, A. Villon has thought of using ozone, or electrified oxygen, which is the most powerful oxidizing agent and the most perfect decolorizing agent. Until 1889 this could not be applied commercially, owing to the high cost of, and the difficulty of obtaining ozone. This is no longer the case, and it can now be obtained in large quantities at a fairly reasonable cost. Broyer and Petit's machine, amongst others, has an output of 8 to 10 cubic meters of ozone per hour. E. M. Villon has designed a large ozonizer capable of producing 200 cubic meters of ozone per hour. He gives the following description of it in the *Revue de Chimie Industrielle et Agricole*.

A hardwood box is lined with glass tiles which are mortised into one another, the joints being filled with a mixture of gum lac and paraffin. In this box, which is hermetically sealed, are placed a number of cells, arranged quincemially. Each cell is made of two glass plates as high as the box and about 3 to 4 cm. less in width; they are filled with small lead shot or small pieces of gas coke. The spaces between the cells allows of the circulation of the oxygen. The cells are connected alternately to the positive and negative poles of an induction coil, the connection being made through the whole length of the cells. Under these conditions there is a regular rain of sparks in the spaces between the cells, and the oxygen passing through them is electrified and transformed into ozone. Glass baffle plates are placed so as to subdivide the current of gas and render the action of the sparks as efficient as possible.

The oxygen is pumped from a tank and sent to a cooler where its temperature is lowered to about 5 deg. C. (23 deg. F.) and from there to the ozonizer, from which it issues heavily charged with ozone. The treatment of the pulp is carried out in wooden tanks similar to those used for bleaching with chlorine gas. The ozone is led in at the bottom and passes through the pulp which it quickly decolorizes. On leaving the chamber the gas is passed through a sulphuric acid tower to dry it and is then returned to the storage tank and sent through the cycle over again.

Ozone bleaching is quicker than chlorine bleaching

and does not present the same drawback—it does not attack the cellulose. It may be allowed to act for a greater or less length of time, according to the degree of bleaching required, without any danger of damaging the stock.

Assuming that ozone costs 200 francs per cubic meter, which is high even for the high prices actually prevailing, the bleaching of 6 tons (metric) of pulp would barely cost 171 francs; i.e., 40 per cent less than electro-chemical bleaching and 70 per cent less than chloride of lime bleaching.

## SULPHITE ALCOHOL SUCCESSFUL MOTOR FUEL.

Sulphite alcohol as motor fuel is officially recognized, a success. The finding is based upon the result of queries sent broadcast to the industry. In order to get reliable information the Swedish ministry for commerce asked Prof. C. E. L. Hubendiek to undertake this enquiry. He received 668 answers to his questions.

An old horse will balk when driven to a new stable. Old engineers and mechanics have fault to find with a new fuel. It would be a miracle should they bestow unstinted praise upon a new discovery or invention. So this kicking and growling about details in the hundreds of answers has to be discounted as a frailty of human nature.

Ten per cent. of the answers reported alcohol motors running satisfactorily in every respect. On the other hand, 4 per cent. reported the alcohol had done damage to machinery parts.

Some of the answers indicated that industrials could not get the purity of alcohol desired. Also the proper kind of lubricating oil was missing. These deficiencies caused corrosion and clogging. The answers, however, showed also that in many cases the conversion from benzine to alcohol had not been performed completely nor correctly. So many of the difficulties experienced are not to be blamed on alcohol as fuel as such, but upon imperfect and slipshod adjustment. No doubt, all these shortcomings will be remedied in the course of time.

Some of the shortcomings noticed were the resistance of alcohol unless warmed sufficiently in advance, which increases the consumption of fuel and lubricating oil; fluid fuel collecting on the walls of cylinders, washing off the lubricating oil and thus leading to increased wear and tear; improper mixing causing incomplete combustion and thereby lowering of motor power.

Prof. Hubendiek found many answers to indicate that the alleged increased wear and tear charged to alcohol was in reality chargeable to inferior lubricating oil. For some of the reports blamed alcohol for corroding parts of the machine, which could not possibly come in contact with the fuel when properly handled. However, there is no doubt that salts of iron used in the production of alcohol have something to do with the increased wear.

Alcohol's obstinacy, when it is to be started, is its most serious deficiency. But, as a whole, the answers to queries prove that sulphite alcohol is available as a practical fuel and that the use of alcohol does not imperil the life of the machine as long as proper precautions have been taken.

Prof. Hubendiek sums up his findings by declaring: There is no reason why alcohol should not be used as fuel.

# Theory of the Preparation and Recovery of Soda and Sulphate Liquors

(Translated for the Pulp and Paper Magazine from La Papeterie, Feb. 10 and 25 and March 10, 1920, by A.P.-C.).

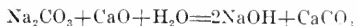
Among the interesting problems which arise in the paper industry there are some deserving special attention. In the forefront of these the manufacture of soda pulp presents one of which is of the utmost importance; and, though it has been solved, the present solution cannot be regarded as the last word in the matter. Especially during the present industrial crisis, when the smaller mills are bound to disappear, and in the presence of the example set by a nation like Germany where the utilization of waste products is properly understood, the preparation and utilization of soda liquor is intimately bound up with the recovery of the soda compounds from the spent liquor.

**Preparation—recovery:** this is the heading we have chosen to summarize the problem. In a large and well organized mill the liquor is prepared once and for all when operations are started. Afterwards the operations follow in a continuous cycle whereby the recovered products are kept in the system. Hence it is merely for the sake of clearness that we have divided this study into two parts. Most of the soda molecules which enter the cycle go through it a great many times. Those which are lost are replaced in the due course of operations by fresh quantities of soda. In the first part on **preparation** we shall deal with the various soda compounds used and the manner of causticifying them. The second part on **recovery** will deal with the evaporation and incineration of the black liquor. A study of the sulphate process is a logical corollary to the present study.

## Preparation.

a.) **SODIUM COMPOUNDS:** Commercial products of this class are very numerous, but experience has shown that certain of them are best adapted to the manufacture of pulp. Caustic soda, NaOH, is used only when recovery is not practised. Cream colored caustic owes its color to the impurities (notably sulphides) which it contains. It is sold in fused cylindrical masses weighing about 200 kg. (420 lbs.) and contains 60 per cent. actual NaOH. White caustic is also sold in fused masses. Though it is white and dearer, it is not as pure; it contains NaCl and NaNO<sub>2</sub>, which is added to oxidize the sulphides. The NaOH content is 60 to 70 per cent. It is but little used for paper-making. Crude Solvay caustic soda is too impure for use in this industry; it is more suitable for soap making.

Caustic soda, however, is used only in small mills which cannot afford the outlay required for a recovery plant. All other mills prepare their own caustic by causticizing the cheaper carbonate. It is causticized together with the salts recovered from the black liquor. The principle causticization, which will be gone into more fully later on, can be summed up by the equation:



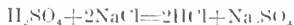
Commercial sodium carbonate is obtained by one of three processes, Leblanc, Haddock and Leith, and Solvay.

"Solvay" soda is the one which is the most largely used in the pulp and paper industry. It occurs as a white amorphous powder, which is almost pure and relatively cheap. The following is a typical analysis of this product:—

Na <sub>2</sub> CO <sub>3</sub>	99.2
NaCl	0.5
Na <sub>2</sub> SO <sub>4</sub>	0.137
CaCO <sub>3</sub>	0.028
MgCO <sub>3</sub>	0.061
Al	0.002
Fe <sub>2</sub> O <sub>3</sub>	0.003
Undetermined	0.049
	100.000

The so-called "crystalline" soda, Na<sub>2</sub>CO<sub>3</sub>·10H<sub>2</sub>O, contains so much water (60 per cent.) that transportation charges prevent its use. It is used for sizing, for which purpose it seems better suited than the other forms of carbonate.

Besides caustic soda and sodium carbonate, sodium sulphate is sometimes used for cooking. As a rule it is found in nature as the hydrate Na<sub>2</sub>SO<sub>4</sub>·10H<sub>2</sub>O, but there are deposits of anhydrous Na<sub>2</sub>SO<sub>4</sub> in Spain. It is prepared commercially in furnaces by means of the reaction.



Sodium sulphate as such is used only in the Dahl (Sulphate) cooking process. It is mainly employed for the manufacture of Leblanc soda.

b.) **ANALYSIS OF SODA COMPOUNDS:** Whatever be the product used, it is of the utmost importance to know its strength, both to obtain a liquor of the proper strength and to calculate the cost and consequently the selling price. The strength is usually measured in some conventional manner, which varies in different countries: in France the "degrees Des-croizilles" are used, which indicate the amount of sulphuric acid neutralized by 100 parts of the product; in England, the "degrees Gay-Lussac" indicate the content of available sodium oxide; while in Germany the percentage of actual sodium carbonate is used. It is usually delivered in bags or barrels. To obtain a representative sample, a small quantity is taken near the centre from as large a number of packages as possible, and placed in glass jars in such a manner as not to gain or lose moisture. Before analysis the samples must be pulverized and thoroughly mixed. A definite amount is weighed and dissolved in water, and the residue is washed until the wash water no longer turns turmeric paper brown. This solution is titrated with standard sulphuric acid, using methyl orange as indicator for the carbonate and phenolphthalein for the caustic. The latter indicator cannot be used for carbonates, as it is affected by CO<sub>2</sub>. The carbonates can first be removed by precipitating with barium chloride and filtering off the barium carbonate, and the NaOH is then titrated in the filtrate. When required, NaCl is determined by titration with standard silver nitrate. A solution containing 29.31 g. AgNO<sub>3</sub> per liter is equivalent to 0.01 g. NaCl per c.c. The titration cannot be made in the presence of an appreciable amount of sulphides.

c.) **CAUSTICIZING:** This is the most important part of the whole process. It consists in obtaining NaOH by treating  $\text{Na}_2\text{CO}_3$  with lime. In small mills, cream colored caustic is bought and used directly. In large mills the soda is recovered from the black liquor in the form of  $\text{Na}_2\text{CO}_3$ , and a certain amount of fresh  $\text{Na}_2\text{CO}_3$  is added to make up for loss in recovery, and the mixture is causticized:



Theoretically 56 kg. of CaO are required to causticize 106 kg. of  $\text{Na}_2\text{CO}_3$ ; but in practice an excess is used, up to 70 of CaO for 100 of  $\text{Na}_2\text{CO}_3$ , owing to impurities in the lime. The latter should be freshly burnt and as pure as possible. The operation is carried out in the causticizers described below. The carbonate solution must not be too concentrated, and should not be above 20 deg. Be, corresponding to about 200 kg. of  $\text{Na}_2\text{CO}_3$  per cu. m. of water. When the concentration is too high, the reaction is reversible:



Lunge has shown that the more dilute the solution, the more easily is the carbonate causticized. Thus: With a 5 deg. Be solution, 99% of NaOH is obtained, with a 10 deg. Be solution, 97.2% of NaOH is obtained, with a 20 deg. Be solution, 90.7% of NaOH is obtained.

It would thus appear advantageous to decrease the concentration of the solution. But then it may become too weak for a proper cooking liquor, and the fuel required to concentrate it must then be considered. It is advisable to depart as little as possible from concentration corresponding to 20 deg. Be. The amount of lime to be used is calculated from the amount of carbonate recovered and the amount added to the recovered salts.

d.) **CAUSTICIZERS.** There are several types of causticizers. Generally, they are large receptacles in which the mixture is heated with free access of air: causticizing under pressure does not seem to be advantageous. For small scale operations which are carried out at rather long intervals, a plain tank is used. The carbonate is dissolved in it and the solution is brought to a boil either by direct fire or by means of steam, and is kept boiling for some time after the addition of the lime. (It should be remembered that the action of lime generates considerable heat.—Ed.) It is advisable to stir vigorously so as to ensure an intimate contact of the lime with the solution, either with a mechanical stirrer, as is usually the case, or by blowing in air or steam. When the mixture is heated by blowing in live steam, it is necessary to take into account the amount of water added by the condensation of the steam. The operation lasts about an hour.

The causticizer with vertical mechanical agitator is but little used. It consists of a rather low cylindrical tank in which the agitator turns. The lime is placed in a wire basket in the upper part of the tank. It is heated by steam, either directly or indirectly.

The H. De Montessus causticizer, which is also but little used, consists of a horizontal tank mounted on bearings. The trunnions are hollow, one serving as inlet and the other as outlet for the steam. The usual dimensions are length 2m., diameter 1.50 m., total volume 2.5 cu.m., useful volume 2.5 cu.m. It rotates at the rate of 1 to 5 R.P.M. Inside, six blades are riveted to the shell, parallel to the axis; they act as

stirrers by continually bringing the lime above the solution. The tank is charged through a manhole and emptied through a suitable cock. A suitable quantity of water is placed in the tank, the carbonate is added, the mixture is heated till the carbonate is all dissolved, and the solution brought to a boil. The lime is then added, the manhole closed, and the causticizer rotated for an hour.

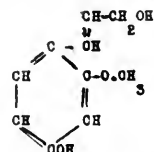
The Solvay causticizer, on the other hand, is very widely used. It consists of a fixed sheet iron tank with a semicylindrical bottom: it is 2.5 m. long, 1.5 m. wide, and 1.8 m. deep and can contain 5 cu.m. of liquor. It has an agitator parallel to the long axis. In the bottom there is a steam coil and in the upper part of the tank is placed a suitable perforated receptacle for the lime. To causticize, 3 cu.m. of water are placed in the tank and heated to 80 deg. C; the carbonate is dissolved in the water, 65 per cent. of CaO is added, and the agitator is turned at the rate of 25 R.P.M. for one hour.

Whichever apparatus is used, the operation should be controlled by chemical tests. The finished liquor should have a density of 10 deg. Be.

e.) **FILTERING THE LIQUOR.** The clear liquor is sometimes decanted from the sludge. But this cannot be done when using waste liquor, and in this case it must be filtered. The Solvay filter, which is the most widely used, consists of a square sheet metal tank 3.50 m. long, 1.50 m. wide and 2 m. high. One meter from the bottom there is a filtering plate supported by double T-irons riveted to the walls. The filtering medium consists of a layer of bricks laid flat, without any cement, a layer of emders which are finer at the top than at the bottom, and another layer of bricks without cement. Such a filter can make 3 or 4 filtrations per 24 hours, yielding 12 to 15 cu.m. of clear liquor each time. After filtering, the sludge is washed with hot water, the first wash water being added to the liquor and the others being used to prepare the carbonate solution. The residue after washing is shovelled out. (This procedure differs from American practice.—Ed.)

f.) **COOKING.** It may be useful here to review briefly the action of the caustic soda, as its omission would leave a gap in the cycle of operations we have set out to study. Cooking of the wood is carried out under a pressure of 3 to 4 kilos (about 43-57 lbs. per sq. in.) by means of the liquor prepared as above described. The concentration of NaOH is relatively low, chemically speaking. If it was too high, it would result in the formation of alkali-cellulose. Under proper conditions of pressure and concentration the soda dissolves, or transforms into soluble compounds, the

#### Tiemann-Harmann Formula.



lignin pectin, gums, waxes and resins which form the incrusting matter. The inorganic compounds such as silica are for the most part rendered soluble. The silica acts as silicic acid and is transformed into sodium silicate. Steam also acts as a solvent at high temperatures: it liberates acids which are neutralized by

the soda. The cellulose, which is insoluble, is thus isolated in an almost pure state. Such are the principal reactions occurring in the digester. But all the soda is not used up, and the spent liquors contain large amounts of it (free and in combination) which must be recovered.

### Recovery.

The waste soda liquor is saved when it comes out of the digester, and the first wash waters are added to it. The recovery of the soda is important for two reasons: it is difficult to dispose otherwise of the black liquor, and the cost of the recovered soda is much lower than that of new soda. The pollution of streams by mill waste is prohibited by law, so that purification of the waste liquor is imperative. Recovery is the ideal form of purification, since it enables by-products to be utilized. Moreover, before the war, NaOH cost 13 fr. per 100 kg., while the cost of recovering the same amount was less than 4 fr. And as 75 per cent. of the soda used can be recovered it is easily seen how great a saving can thus be effected.

The black liquor must be evaporated, incinerated and causticized. The amount of water to be evaporated is considerable: 600 l. are reckoned per 100 kg. of soda. The evaporation is therefore the most expensive operation, and the apparatus employed must utilize the heat as efficiently as possible. Theoretically, 1 kg. of coal on burning should evaporate 11 kg. of water. In certain furnaces an evaporation of 13 kg. has been noted, this being due to the burning of organic compounds from the liquor. Certain well designed systems utilize practically all the heat.

a.) EVAPORATION ON THE FURNACE. The Porion furnace is the standard type of furnace for the evaporation of black liquor. It consists of a masonry chamber 15 m. long, and 2.2 m. wide, with a slightly arched roof. At the back there is a chimney equal in diameter to the width of the chamber and about 15 m. high. The floor is slightly inclined towards the hearth. Tanks are placed over the vault to receive the liquor, which flows continuously in a properly regulated stream on to the back part of the floor. Owing to the slight inclination of the latter, the liquor travels slowly towards the front part of the furnace in an opposite direction to that of the hot gases. At suitable intervals are placed horizontal agitators with their axes at right angles to the length of the furnace. These turn at the rate of 250 to 300 R.P.M., throwing up the liquor as a fine spray, and thus ensueing its intimate contact with the hot gases. The liquor thus becomes more and more concentrated at it approaches the hearth: it is led in between the fires where the concentration proceeds very rapidly, and a crust forms on the surface which must be broken from time to time. When the concentration has proceeded far enough, the salts are raked out to be incinerated. A properly conducted Porion furnace should yield 750 kg. of recovered salts per 1000 kg. of coal. Its operation is continuous and it needs to be shut down only for repairs.

In the Roeckner furnace the evaporating surface of the liquor is increased by lengthening the chamber leading from the incinerator to the stack and by leading the hot gases both over and under the liquor which is spread in thin layers on trays. Over the incinerator are a series of shallow pans and trays into which the liquor flows from the main evaporating pan. The liquor becomes more and more concentrated as it travels

towards the incinerator, and finally is incinerated, the gases of combustion being united with those from the fuel and helping to evaporate fresh portions of liquor. The uppermost evaporating pan in which the liquor arrives has a thermosiphon, which sets up proper circulation of the liquid. Besides the defects inherent to this class of furnaces, it possesses the further disadvantage that the pans wear out quite rapidly.

The Richard Schneider oven consists of a tower with numerous movable plates inclined at 30 deg. to the horizontal.

All the recovery furnaces aim at subjecting the black liquor to the action of the hot gases produced by the combustion of the carbonaceous matter in the salts which have been recovered making the gases and liquor travel in opposite directions, giving as large an evaporating surface as possible, and utilizing the heat from the water which has been evaporated to heat fresh portions of liquor. The problem has been fairly well solved in the furnaces above described, but they all have a common fault: as the combustion gases come in direct contact with the liquor, the sulphur from the fuel employed combines with the soda to form sulphide, sulphite and sulphate of sodium. Multiple effect evaporators do not possess this defect.

b.) MULTIPLE EFFECT EVAPORATORS. II. de Montessus has defined as follows the principle governing the action of these evaporators: "A liquid which is converted into vapor in an open vessel must overcome the atmospheric pressure to which it is subjected; the quantity of heat required for vaporization and the boiling temperature decreases as the pressure over the liquid decreases. Moreover, the vapor formed carries off the latent heat of vaporization and gives it out again when it condenses by contact with a cooler liquid, which liquid may even boil if the pressure over it is sufficiently low." In multiple effect evaporators the vapor from one effect carries the latent heat into the next effect which is under a lower pressure. The black liquor travels through the effects. According to the number of effects, they are said to be double, triple, or quadruple effect evaporators.

The Scott quadruple effect evaporator is the standard apparatus of this kind. It consists of 4 similar vertical cylinders. The liquor is brought into the first and is passed through each of the others in turn by means of suitable piping and pumps becoming more and more concentrated. The last effect, the one containing the most concentrated liquor, is heated by live steam in a set of pipes or tubes inside the effect. The vapor formed is led into a similar set of tubes in the preceding effect, and so on through the system. As the evaporation becomes more and more difficult because the vapor carries less heat and there is a greater volume of water to evaporate, the pressure in the successive effects is decreased by suitable means, being highest over the most concentrated liquor and lowest over the most dilute liquor. The liquor thus passes through a series of closed boilers and travels in opposite direction to the heat; the most concentrated is acted on by the hottest vapor, and the evaporation is facilitated by decreasing the pressure in the successive effects. A properly designed and operated quadruple effect evaporator of this type can evaporate 100 cu.m. of liquor per 24 hours with an evaporation of 20 lbs. of water per lb. of coal.

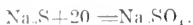
The Kestner triple effect evaporator is of the same type and is based on the same principle.

The Yaryan evaporator, which is used for extra-

rapid concentration, is also a vacuum evaporator. It is very largely used in sugar refineries. It also utilizes the latent heat of vaporization of a liquid under a given pressure to evaporate a further quantity of the same liquid under a lower pressure. The liquor to be evaporated is passed through a series of tubes surrounded by the heating vapor; after each effect the liquid is thrown with considerable force against a plate so as to separate the vapor formed from the remaining liquor.

Sometimes other evaporating systems are used. Among these, in one Belgian paper mill the liquor is sent to tubular boilers and is there concentrated to the desired degree, at the same time furnishing steam. At the Ranheim mill, in Norway, a preliminary concentration is effected in two boilers: the steam thus generated heats up a third boiler where the liquor is still further concentrated and from which it goes to the incinerator. The boiler also supplies the steam required for the driers.

e.) INCINERATION. Whatever type of evaporator is used, when the liquor has been sufficiently concentrated it must be incinerated. This modifies to a certain extent the composition of the recovered salts, and burns off many of the impurities. The incineration may be effected directly under the evaporators, or in a muffle furnace or a rotary furnace. The composition of the recovered salts will vary according to the material cooked, the conditions of cooking, and the method of recovery. When cooking straw 90 per cent. by weight of the soda used is recovered, the composition of the recovered salts being 72 per cent.  $\text{Na}_2\text{CO}_3$ , and appreciable quantities of sodium silicate, as wheat straw contains 4.4 per cent.  $\text{SiO}_2$  which can fix 4.55 per cent.  $\text{Na}_2\text{O}$ . In the case of wood the salts contain about 80 per cent.  $\text{Na}_2\text{CO}_3$ , 1 per cent.  $\text{NaOH}$ , 4 per cent.  $\text{Na}_2\text{S}$ , 2 per cent.  $\text{NaCl}$ , 2 per cent.  $\text{NaSO}_4$ . If there is too much  $\text{Na}_2\text{S}$ , as it is not causticized, the liquor made from these salts will discolor the pulp. Should such a condition be revealed by analysis, it is advisable to blow air through the liquor to oxidize the  $\text{Na}_2\text{S}$ :



d.) CAUSTICIZING. The causticizing of alkali has been treated in the first part of this article. As we have just seen, the recovered salts consist mostly of carbonate. Sufficient fresh carbonate must be added to make up for any loss in the recovery process: this loss is usually about 25 per cent., so that we have the following to causticize:

Recovered carbonate . . . . .	75 p.c.
Added carbonate . . . . .	25 p.c.
Total carbonate to be causticized . . . . .	100 p.c.
Lime required to causticize . . . . .	60 p.c.

The causticized liquor should be used as soon as possible as it tends to absorb  $\text{CO}_2$  from the air according to the equation:



The reaction of causticizing, as shown above, is:



This liquor is then ready to be utilized for cooking, so that it is seen that there is a continuous and ever-recurring cycle of operations:

Cooking, Evaporating, Incinerating, Addition of fresh soda, Causticizing, Filtering, as shown in the diagram. This cycle is gone through indefinitely by each soda molecule, until it is lost either during washing, men-

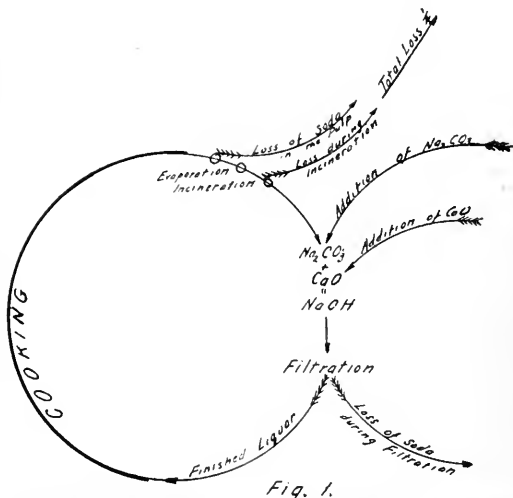


Fig. 1.

Section through Sampling Tool for Pulp.—The handles may be unscrewed and the whole packed in a small bundle.

eration, or filtering. The molecules thus lost are replaced by the addition of the fresh soda.

**Sulphate Process.**

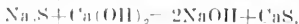
About 1883 Dahl, of Danzig, conceived the idea of adding sodium sulphate to the recovered liquor. During the incineration of the salts part of the sulphate is supposed to be reduced to sulphide by the organic matter present, and this sulphide was to be transformed to carbonate by the action of the  $\text{CO}_2$  in the air. As a matter of fact, causticizing seems to act on the sulphide as well as on the carbonate. Though it was used to a considerable extent in Germany when it first appeared, it gave but indifferent results. The process consisted in adding sodium sulphate together with 25 per cent. of its weight of quicklime to the recovered and causticized solution, in the digester. It has since been improved and is now widely used. As conducted at present it is merely a modified soda process in which the cheaper sulphate is used instead of the carbonate. The various processes of recovery are the same as those described for soda liquors, as shown in Fig. 2. The composition of the recovered salts is fairly constant, being as follows:

	Per cent.
$\text{Na}_2\text{SO}_4$ . . . . .	16
$\text{Na}_2\text{CO}_3$ . . . . .	50
$\text{NaOH}$ . . . . .	20
$\text{Na}_2\text{S}$ . . . . .	10
Undetermined . . . . .	4

Sodium sulphate is added, equivalent to the amount of soda lost, and sufficient lime to causticize the whole of the salts. It is necessary, however, to add the sulphate before incineration, as otherwise it will not be causticized by the lime. But if it is incinerated with the rest of the salts, the following reduction takes place:



and the sulphide thus formed can be causticized:



Hennefeld claims, however, that the addition of the sodium sulphate to the liquor just before causticizing

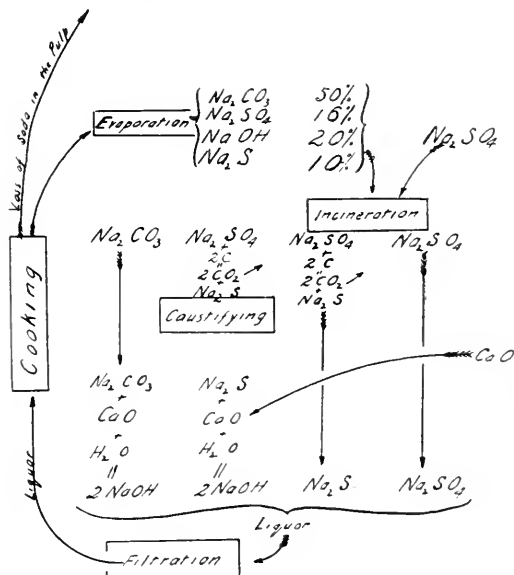


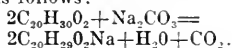
Fig. 2.

Showing Samples cut from 10 wet laps.—The strips were cut in 45 minutes, weighed 7325 grams and required 24 hours to dry. The discs were cut in 8 minutes, weighed 632 grams and took 6 hours to dry. Behind the discs is the basket in which they were dried.

results in a better quality of pulp. Whichever method is followed, there always remains some sulphate as such in the finished liquor, as it is not all reduced when added before incineration, and it goes through all the succeeding operations. There is thus established a cycle differing from the preceding one in the substitution of Na<sub>2</sub>SO<sub>4</sub> for Na<sub>2</sub>CO<sub>3</sub>, but in which caustic soda is still the active ingredient, as shown diagrammatically. The diagram shows the usual process, where the sodium sulphate is added before incineration; but it would be but slightly different in the Hennefeld process, where the causticizing would take place in the digester during the cook.

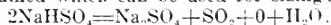
**Conclusion.**

Such is the practical solution which has been applied to this highly important problem. Its development has thrown into the background certain ideas which it may not be amiss to recall, both to give credit to their authors and in view of the further progress to which they may lead. Electrolytic recovery has been suggested, to soda going to the negative pole and the other substances in the solution to the positive pole. Another method of re-covering the salts in the spent liquor consists in utilizing them for other purposes than soda recovery. Attempts have been made to use the liquor for sizing; the impurities must be removed by filtering through charecoal or CaO+CaCO<sub>2</sub> residues. The sodium carbonate contained in the liquor then reacts as follows:



Also, by treating the spent liquor directly with aluminium or iron sulphate, a black gum is precipitated

leaving a clear solution of sodium sulphate. On the other hand, by treating it with milk of lime the soda remains in solution, but there is formed a voluminous, gelatinous, flocculent precipitate which cannot be filtered. By incineration of the bisulphate recovered from spent liquor from the Dahl process, sodium sulphate is obtained which can be used for sizing:



If the bisulphate is incinerated with kaolin or clay it yields sodium sulphate and alum.

No matter how many methods are proposed or even found practical, recovery is imperative. The problem has been partially solved, but further improvements, or even new methods, offer a very wide field for research. Not only can the active ingredients be made the object of complete recovery, but the recovery of resins and other constituents of the various plants treated offers interesting problems, which will soon become as important as the one which gave rise to them. New energies are required to bring to a happy conclusion a study which is now well on its way.

**YOUR EMPLOYER.**

By H. ADDINGTON BRUCE

You have fallen, they tell me, into an unfortunate habit of railing and sneering at your employer. You describe him as arrogant, selfish, indifferent to your welfare, graspingly intent on grinding you down.

Luridly you refer to him as a bloodsucker, a parasite, an inhuman profiteer, an enemy to the workingman. Possibly he is all of these things. In that case I advise you to find another employer as quickly as you can.

But, you protest, all employers are alike. They differ only in degrees of greed or inhumanity. If that really is your belief, brother, I urge you to settle down and do some hard thinking.

At present, let me tell you plainly, you are blinded by prejudice and class hatred. You are in a dangerous frame of mind—dangerous particularly to yourself.

For it is a frame of mind that will deaden all your interest in your work, will cause you to work badly, hence will soon or late make it impossible for you to hold employment of any sort.

Whereas, by shifting the center of your attention from your employer to your work, the chances are you will work so much better that the employer you now criticize will give you more responsible work to do, carrying with it more pay.

Unless he is a knave or a fool—and the average employer is neither a knave nor a fool—he is bound to treat you fairly if only from self-seeking motives.

He will not "keep you under" if you really are a first-class workman. On the contrary, he will steadily promote you, lest you justly become discontented and take a place elsewhere.

And, appreciating that it is to his interest to safeguard your efficiency by safeguarding your health, he will see to it that your working place is sanitary, that you have ample time for rest and recreation, and that you are not overworked.

If this is not the policy of the men for whom you now work, again I advise you to make a change.

But first be sure that the difficulty you now find in earning what you ought to earn is not chiefly your own fault.

Are you honestly trying to work efficiently? Are you rendering loyal service? Are you living healthfully when away from your work?

### SPANISH RIVER TO MAKE 1,000 TONS.

Negotiations are now being conducted by the executive of the Spanish River Pulp and Paper Mills to further increase the newsprint output of the company in order to cope with the rapidly-expanding demand for paper of this class on outside markets. At the present time the three plants of the Spanish River organization, situated at Espanola, Sault Ste. Marie and Starg on Falls, Ontario, are turning out a daily average of some 675 tons, which with installation of new machinery now in process of completion will be increased to 725 tons by the end of the current calendar year.

So insistent has been the increased demand for newsprint, the directors of the company have decided to further augment production and tenders for new paper-making machinery have already been called for calculated to increase the output of paper to 1,000 tons daily. Builders of the necessary machinery are already figuring on the specifications and definite orders for the new equipment will probably be placed in the near future.

Among the tenderers is included the new Dominion Bridge subsidiary, the Dominion Engineering Works, Limited, in whose shops are nearing completion the two giant paper making machines for the Laurentide Company, at Grand'Mere, the order for which was placed some months ago, and which are expected to be in operation by the end of the present year.

Definite announcement of the plans of the Spanish River board, it is anticipated, will be made at the annual meeting of the shareholders of the enterprise to be held at Toronto at the end of this month. The formal placing of Spanish River common securities on a dividend basis will also likely prove one of the developments of the meeting.

With its newsprint capacity increased to 1,000 tons daily, Spanish River will be the second largest producer of paper of this class in the world, International Paper, of the United States, having a daily capacity of 1,200 tons of the several pulp and paper products, of which 1,200 tons is newsprint. In addition to the extensions at the three manufacturing plants of the Spanish River enterprise, it is proposed to further increase the easily-available water-power development, the cost of which is estimated at a conservative figure.

### WESTERN CANADA PULP AND PAPER COMPANY, LIMITED, NOW IN OPERATION AT PORT MELLON, B. C.

The Western Pulp and Paper Company, Ltd., which was formerly the Rainy River Pulp and Paper Company at Port Mellon, B. C., on Howe Sound, is now in operation, and is turning out 20 tons of sulphate pulp per day, and by the first of October it is expected that the plant will be turning out full 40 tons daily, as machinery adjustments and additions to the plant will then be completed.

Mr. Robert Sweeney, director of the company was in Vancouver recently, and reports great interest among both American and Canadian financiers in the British Columbia pulp and paper industry.

Mr. Sweeney states that as the market develops and other's warrant additions will be made to the present plant to enable the Company to fill all demands. Other additions will not be made however until the demand for pulp warrants them.

Mr. Sweeney instanced the American and Canadians who were on the board of directors of the Western Canada Pulp and Paper Co., and mentioned the following: Mr. E. M. Davis, President, with his headquarters in New-York, who is prominent in chemical circles, and did much for the Allies during the war along chemical lines. Mr. R. M. Daly, the Vice-president is Manager of the Home Bank of Canada.

Mr. A. W. Austin, Manager of the Port Mellon Plant was in Vancouver conferring with Mr. Sweeney for several days.

Every indication points to a very successful operation of this Company's plant, and of an ever increasing output.—P.

### THREE RIVERS PULP AND PAPER CO.

Announcement is made of the incorporation of the Three Rivers Pulp and Paper Co., Ltd., with a capitalization of \$4,400,000. No names were given in the report. Incorporation also has been granted to the Jost Pulpwood Company of Campbellton, Ltd., Campbellton, N. B., capital \$75,000.

The officers of the Kootenay Pulp and Paper Co. Ltd., which has a British Columbia Provincial Charter are all residents of Nelsons, B. C. The company's capital is \$500,000. The list is:

President, Dr. L. E. Borden; vice-president, Carl G. Simpson; secretary, H. E. Dill. Other directors: J. A. Oustin, Alex. Currie, E. G. Matthew. Others who are expected to take an active part in the company are W. G. Brown and W. J. Siebert.

The proposed site of the plant is at Grohman Creek and the object of the company is to carry on the business of pulp, paper and lumber manufacturing.

There is said to be plenty of pulpwood and power easily available.

### QUEBEC LUMBER CO. TO GRIND WOOD.

Through the courtesy of the General Manager, Mr. John Paradis, the Pulp and Paper Magazine is advised that the Quebec Lumber Co., whose saw mill is at Valley Stream, Que., will start producing groundwood pulp in 1921, as soon as their six grinders are installed. Initial production will be 50 to 60 tons and this will be increased as soon as machinery can be procured. The mill will be on Quebec Harbor, where the Company has a deep water wharf, rail connection, and fine water storage for pulp wood. The Company has large limits. Mr. Edouard Lavoie, of Chicoutimi, is the engineer. Shawinigan power will be used.

### SODA PULP MILL FOR HOWARD SMITH.

Changes are being made at the Cornwall plant with a view to turning out a class of papers not hitherto manufactured in Canada in sufficient quantities to meet the home demand and leave a percentage over for export. Extensive additional timber limits have been secured of late and an electrolytic bleaching process is being installed as well as a fifty ton pulp plant to manufacture bleached soda pulp from poplar for use in the manufacture of high-grade book papers.

### REPAIRING ACID VALVES.

Dangerous acid fumes arise after valve bonnet has been removed. "Work Safely." Wear a mask and soak the valve in soda water before taking it apart.



# How Scandinavia Looks to Canadians

## Canadians Back from Europe.

Mr. J. A. Bothwell and Mr. Geo. F. Steele have just returned from an extensive trip to Norway, Sweden, Finland, France, Belgium and England. In conversation the story they tell is much more interesting than is possible to repeat in the space available. The following is a summary of the impressions of their trip. In hearing Mr. Bothwell describe their trip the other day, the editor got the impression that the most important event was the sight of North America once more and that the rapidly brightening colors of the Maple leaves brought a real feeling of joy and of pride in the Dominion to the home comers. After so many interesting scenes and experiences such an expression was very gratifying to those of us who must be satisfied with Canada as an all the year round residence. However, the remarks of the travellers will be of interest to those who have not had an opportunity to see Scandinavia at first hand.

### Norway.

This picturesque country is a land of small fertile valleys hemmed in by large areas of barren mountains. Spread generously over the country are large timber areas. There are some great water powers which have been developed and which furnish power for the well known pulp and paper mills and the other industries. Millions of horse power, however, are still undeveloped. The largest power that has been harnessed is said to be approximately 300,000 h.p. and is used for making artificial nitrates. The many opportunities for further development of the water power resources made a strong impression on the visitors, but because of the intense national spirit of Norway, which discourages inviting the investment of foreign capital, it is probable that the development of water power will proceed slowly. Some large concerns, formerly controlled by foreign capital, have, during the war, passed into the hands of domestic owners.

The Norwegians are a great Maritime people and have for centuries been a nation of sea-faring men. There are large ship owners and many great fortunes were accumulated during the great war by Norwegian shipping interests, in spite of the tremendous losses of ships. In addition to her large carrying trade Norway controls a great fishing and whaling fleet and the products of the sea furnish a substantial source of revenue to her people.

The scenery of Norway is grand beyond description, and great numbers of tourists from all lands annually visit this beautiful country. Anyone who has the means and the inclination to travel may well visit this land, peopled by a most hospitable and kindly race.

**PULP AND PAPER INDUSTRY.**—The expansion of the pulp and paper business in Norway has been quite remarkable and has shown a very steady growth during the past twenty-five years. As has been the case elsewhere the industry of this country has passed through a prolonged period of unprofitable returns on invested capital, but during the past few years this situation has very materially changed for the better.

Norway is thoroughly alive to the conservation of her timber areas, deeming them to be a national asset,

and through the enactment of stringent laws, selective cutting is followed. It is doubtful whether any material increase in the production of wood pulp will be made, as there is no tendency such as is found in America towards indiscriminate wasting of these forests. Norway is to be heartily congratulated on its energetic forest policy as regards the preservation of its wood-bearing areas, and on its reforestation policy through a long period of years. The cost of manufacturing the paper in this country is necessarily very high, and is still increasing in common with all other paper-making countries. The cost of some paper-making materials has increased enormously, in some cases as much as 600%. Some of the most notable increases are in fuel and pulpwood.

### Sweden.

The scenery of Sweden, especially in the southern portion has not the picturesque grandeur of Norway, but it is a most beautiful land, and is a paradise for artists. The red-tiled roofs, painted buildings, green foliage, an abundance of flowers, and the general harmony of color cannot help but impress the most calloused traveller.

The first thing which greatly impresses a visitor to Sweden is the very favorable transportation facilities. This applies both to the inland waterways, and to exterior commerce. Through the wonderful system of interior waterways the Swedish manufacturers are able to lay down their finished products at seaboard ports at a minimum of cost, and also to secure the delivery of their raw materials in an equally favorable and economical way. This is in sharp contrast to the high freight rates and difficulties surrounding shipments to and from Canadian mills.

Sweden has fostered and controls immense shipping corporations, sending its ships to all foreign ports. Its great Trans-Atlantic lines carry the products of Sweden at a minimum rate to all countries, and its flag is well known on every sea. As an example of the advantages obtained by Sweden in the World's market, we may mention that the vessel rate on newsprint paper from Swedish to Australian ports is from \$15.00 to \$25.00 per ton in favor of the Swedish shipper, as compared with the Canadian shipper. At the present time the rate on newsprint paper from Sweden to New York (practically a distance of 4,000 miles) is approximately the same as that paid by Canadian shippers for a distance of less than 500 miles.

The second thing which greatly impresses a Canadian visitor is the vast extent of the timber resources of Sweden, easily accessible by waterways, and adjacent to valuable and noble water powers. Many undeveloped water powers are lying dormant in Sweden, later on to be harnessed and put to work.

Sweden is one of the largest exporters of sawn lumber in the world. Great saw mills line the shores of the immense navigable rivers of Sweden in impressive array. Many of the old-time lumber operators are now operating extensive pulp and paper mills. The rate of increase in the production of pulp and paper has only been equalled by the increase in production in Canada during the past ten years. There are many new, up-to-date, and efficient mills managed

by technical men of the highest standing and the products of these mills are of the very highest quality.

#### Forestry First.

What especially impresses the Canadian visitor is the large number of new experiments being conducted by these highly trained technical men for the improvement in methods in the industry, many of which are successfully used in Sweden. It is conceded that Sweden can boast of the most highly trained corps of forest engineers in the world, many of whom are the product of their excellent Universities, and their remarkable Forestry School in Stockholm. The care and intelligence displayed in the conduct of the forest and the cutting of timber in Sweden, is in marked contrast to that in vogue in the countries of the North American continent. The regulations governing selective cutting in that section are carried on under the advice of a committee appointed for each district, and next in authority comes the Forestry Department of each company, who have full control in the selection of the timber to be cut by the operators. The cut-over lands of Sweden are much better adapted to natural reforestation than similar areas on the American continent. Sweden is strenuously endeavoring through the cooperation of the largest operators, and by the enactment of stringent legislation, to perpetuate her forest areas.

The high cost of manufacturing in Sweden is no exception to the experience of other countries. Especially is this true in regard to fuel, coal being unobtainable. This necessitates the use of tremendous quantities of pulpwood and cord wood to replace coal. The cost of fuel, together with the immense increases in all other items entering into the cost of paper has resulted in a very high cost of the finished product. Sweden is at the present time the largest exporter in the world of raw materials for paper making. It is only natural to conclude that this export of raw materials will be decreased rather than increased by the installation of paper making machinery for the production of high grade papers.

Stockholm, the beautiful capital city of Sweden, with its many beautiful buildings situated on its many islands, partaking in many respects of the character of Venice, and the gaiety of Paris, is an exceedingly attractive city to a visitor from foreign lands. This city is the headquarters of many of the large pulp and paper companies, and also of the very excellent and energetic pulp and paper associations of Sweden, where foreign pulp and paper men are received most generously at all times. The management of these associations is entrusted to the hands of men of very great ability. The courtesies extended to the Canadian visitors by each of the Sweden manufacturers whom we met would be impossible to describe.

#### Finland.

Finland is a most interesting country to a visitor, as it is a country of great contrasts and great future possibilities. It has at present a large output of pulp and paper. Owing to the heavy hand of Russia its development was greatly retarded for many years, and now that its progress is unfettered it is to be expected that its development will be very rapid.

Finland has tremendous natural advantages by reason of its immense and far reaching inland waterways, its extensive forests, and its undeveloped water powers. With the exception of Canada it is equalled by none, and it is the leading country for the develop-

ment of the pulp and paper industry. At the present time there are several large and modern paper and pulp mills being erected and contemplated.

Finland is not so fortunate in its ability to command low vessel rates to destination, as is her competitor Sweden, but owing to lower cost of manufacture she is able to off-set this disadvantage.

Finland has been, and is still suffering from the same causes as affect other paper manufacturing countries, namely, excessive increase in cost of manufacturing in the past few years, and in our opinion the end has not yet been reached. Coal is almost unobtainable, and we saw hundreds of thousands of cords of white birch cord-wood to be used as fuel in the industries of Finland. This country is to be congratulated on its far-sighted, and intelligent handling of its out-put of pulp and paper, which is in sharp contrast to the methods employed in other countries.

The total production of pulp and paper in Finland is handled through one central Agency or Bureau. The Chairman of this Bureau is no less a person than the active and highly intelligent minister of trade and commerce of Finland. This shows the whole-hearted support which the Government of Finland gives to the export industry of that country. The Board of Directors of this Union is composed of a body of big, strong, broad-minded and farsighted men, who would be distinguished for ability in any country of the world. This Association owns one of the finest buildings in Helsingfors to house its staff. The open-hearted hospitality of the Finnish paper makers extended to the visitors from Canada both in their homes and in their mills was phenomenal.

Closely allied to the paper business in Finland is the great development in the trade of sawn lumber, which is shipped to all markets.

One of the most interesting things which the visitors saw in their travels in Norway, Sweden and Finland was the total absence of stocks of paper and pulp of any description in those countries. In fact we found that large contracts had been made covering the year 1921 for both pulp and paper at prices ruling today.

#### ENGLISHMAN JOINS TECHNICAL SECTION.

A new link in the friendship between Canadian and British mills is the Technical Section. Mr. A. A. Richards, of Edward Lloyd, Ltd., Sittingbourne Mills, Sittingbourne, Eng., is now a full member. We shall hope to have him attend some of our meetings.

Mr. A. B. Copping, Brompton Pulp & Paper Co., Ltd., East Angus, P.Q., has been elected a student member of the Technical Section of the Canadian Pulp & Paper Association.

#### PERFECTION AT LAST.

We have been told of a want ad. which opened as follows:

"Academically perfected paper technician, seeks engagement, etc."

We are inclined to believe that he received few replies.—Canadian Chemical Journal.

Both Mr. P. T. Dodge, President of the International Paper Co., and Lord Beaverbrook, publisher of several English papers, have denied all connection with the big paper mills rumor that was passing around lately.

# British Trade News

(From Our London Correspondent).

London, Sept. 13, 1920.

It is stated in London today that Mr. G. H. Wilkinson, of the National Pulp and Paper Company, Limited, and who is already connected with a range of paper mills, including Bridge Hall, Wycombe Marsh, Kings, Loudwater and Iping, has invested in another English paper mill making machine glazed paper. His mills now produce paper from the finest rag tissue to M. G.

## Anglo-Newfoundland Development Company.

There will shortly be issued £800,000 of 8-per cent. guaranteed 15-year second Mortgage Debentures of the Anglo-Newfoundland Development Company at the price of 98-per cent. The debentures will be repayable at 103 per cent. by 10 equal annual drawings, to be made in December of each year, beginning in 1920, so that the entire issue will be repaid in December 1935. The yield in interest will thus be £8 3s. 3d. per cent., plus a profit on repayment of £5 (free of tax) on each £98 invested. The net assets of the company available as security for the issue amount to £2,055,720, but in addition to this security the principal and interest are unconditionally guaranteed by the Associated Newspapers Ltd. (otherwise the London "Daily Mail" and the London "Mirror", a picture paper) whose net assets amount to £3,217,444, bringing the total security up to £5,273,164. It will be recalled that the Anglo-Newfoundland Development Company was formed 15 years ago and has since made remarkable progress through the great support given in London and England generally. Some 3,500,000 logs are reported to be cut annually and the mill which was started in 1910 now produces 55,000 tons of paper each year. Profits for the year ended August 31 last amounted to £141,091 whereas in the last pre-war year the total was £11,662. The profits of the Company, along with those of the newspapers mentioned, showed a combined total in 1920 of £583,320. The Anglo-Newfoundland Development Company now want the funds for development purposes in order to meet the growing demand for their paper and also to provide capital to meet increased working expenses owing to the high cost of materials and labor.

## Lord Riddell Predicts Cheap Paper.

The annual meeting of George Vennet, Ltd., the well-known London publishers of numerous papers and periodicals, was held a couple of days ago. Lord Riddell—who is well-known in the paper trade—presiding. In the course of a long speech Lord Riddell said the President was in Canada, attending the Press Conference. For the company the past year was a trying and difficult one, owing to the high price of paper and increased expenses all round. The revenue exceeded that of any previous year, but their profits had been reduced by the causes he had mentioned. Happily they started the year with large stocks of paper bought at comparatively low prices, but they found it necessary, in common with other publishers, to increase the selling price of several of their publications. As regarded the high cost of paper, he believed paper and pulp companies in Canada were considering the possibilities of the forests of North America and he hoped that in the course of a year or two paper would be reduced to 2d (4 cents) per lb. He did not, however, propose to make any prophecies in regard to the paper market beyond saying that there were indications that

the world's output would be substantially increased next year and still further in 1922. Whether the increased production would meet the steadily increasing demand it was impossible to say.

## Raw Materials.

The Trade Board figures for August show a considerable increase in the imports of raw materials. Figures for the eight months are as follows:—

	1919	1920
	Tons	Tons
Chemical Pulp	221,148	374,751
Groundwood	350,155	367,573
Esparto	45,260	124,201
Rags	3,125	7,709

## Groundwood Imports.

In the British imports of groundwood Canada occupies a growing importance. The supplies from all countries for eight months ending August 31, were as follows:—

	1919	1920
	Tons	Tons
Sweden	66,114	60,824
Norway	214,771	223,246
Canada	24,732	47,103
Other Places	14,562	12,189

These make a total of 320,179 tons for July, Aug. 1919 as against 343,754 tons for the corresponding period in 1920.

It will be noticed that in August Sweden fell off considerably in supplies and Norway also; while Canada shipped increased quantities. In order to get at the value of the shipments I will quote the quantities and value of them entered on the Customs sheets for August last:

	Aug. 1919	Aug. 1920	Values
	Tons	Tons	in £
Sweden	15,319	11,362	191,244
Norway	30,774	25,783	348,197
Canada	12,292	21,008	416,748
Other places	10,463	8,839	139,554
Total	68,848	66,952	

Simple division will enable one to work out the cost per ton Norway's value is remarkable. Groundwood is £17 10s a ton today in London for prompt delivery.

## Unbleached Chemical.

The countries supplying unbleached chemical dry pulp to the British markets in August last were as follows, in tons:—

Finland, 3,626; Sweden, 33,000; Norway, 6,345; Germany, —; Canada and other Places, 5,453.

Sweden's 220,288 tons for the 8 months are valued at £7,643,948; Finland's 30,915 tons at £1,173,996 and the 67,329 tons from Norway at £2,266,783. The value of Sweden's 33,000 tons supplied in August last is put down at £1,369,836.

## Bleached Chemical.

The supplies of bleached chemical dry are still very unsatisfactory to paper mill owners, as the imports for August show: Sweden, 135 tons, worth £12,520; Norway, 1,290 tons, worth £67,527; Canada and other Places, —; Germany, 314 tons, worth £21,465.

The imports for the eight months July-Aug. compared with the same period in 1919 were as follows, in tons:—

# What T. A. P. P. I. Did at Saratoga

(Continued from September 16).

## Report of Committee on Paper Testing.

Frederick C. Clark, chairman, reported as follows for the Committee on Paper Testing:

Mr. Chairman, the Paper Testing Committee have nothing further to report other than the fact that the revised copy is now in the hands of the printer. It has certain additions to be made to it since our last report in April in New York.

I would like to call the attention of the members to one thing, and that is, when they get these copies, or this copy of our revised report on paper testing, that they will look it over, and if there are any suggestions that they can add, I would like very much to have them write in to our committee, because we would appreciate any suggestions that any of the members should care to offer.

## Report of the Committee on Soda Pulp.

George K. Spence, chairman, presented the following report for the Committee on Soda Pulp:

Mr. Chairman, it has been customary for the Committee on Soda Pulp to present a paper at each meeting of the Technical Association, and we will endeavor in the future to keep up that custom, and with this idea in view the personnel of the Soda Pulp Committee has been made up of members who, I feel satisfied, will co-operate along this line. Each member will take his turn in presenting the paper, and in this way the work will be divided up, and each will give his attention to the work.

I feel that the work of the committees of the association should be more or less at the disposal of the members in working out any idea that might arise; and I wish the members to understand that the Soda Pulp Committee will be at their disposal, and we therefore are open to suggestions at all times from the members upon any subject they wish investigated. On the other hand, we will expect, or at least hope to have the co-operation of all the members by furnishing any data they have on hand, and to assist in drawing conclusions as to whether any new idea under consideration can be recommended by your committee to members of the association.

An example of a subject of this kind is one which I shall present later in the day in a paper entitled "Curtailling Bleach Consumption by Adding Sulphur to Digester Liquor." That has reference to soda digesters. This paper will be a continuation of the so-called committee report. It does not mean much to have a statement that by adding sulphur you digest a liquor. The yield in strength of pulp was increased, and bleach fibre is easily produced.

What the manufacturer wants is figures showing how much yield in strength was increased, and how much bleach is saved by such an addition.

There are many other similar problems confronting the paper and pulp manufacturers today, and your committees can render the members of this association very valuable assistance in solving these problems; and for that reason I say the Soda Pulp Committee is at your disposal.

## Report of the Committee on Standard Methods of Testing Materials.

The report of the Committee on Standard Methods of Testing Materials was presented by E. C. Tucker, chairman.

	Jany.-Aug. 1919	Jany.-Aug. 1920
Finland . . . . .	25	.....
Sweden . . . . .	1,901	2,919
Norway . . . . .	6,834	11,464
Germany . . . . .	.....	505
Canada and other Places . . . . .	2,224	5,185

### Paper Imports.

Owing to a system adopted by the Imperial Government, for some reason best known to themselves, but evidently intended to hide the quantities of exports and imports, no particulars can be furnished of the actual importation of newsprint into United Kingdom. What particulars they do supply are hopelessly muddled. As an instance, they classify Packing, Wrapping and Tissue paper all as one. Under the heading of "printing and writing paper in large sheets" they give the following imports for August last:—

	Cwts.	Value—£
Germany . . . . .	25,307	77,593
Sweden . . . . .	62,538	154,056
Norway . . . . .	34,604	101,016
Belgium . . . . .	1,648	8,484
U. S. A. . . . .	4,195	18,875
Newfoundland . . . . .	363,580	1,181,910
Canada and other Places . . . . .	76,204	190,822

We do know that the great supplies from Newfoundland are mostly newsprint and supplies for one month are on a large scale. U. S. A. sends mostly a good quality printing paper suitable for book work.

### Coated Papers.

In August the following countries supplied coated papers:

	Cwts.	Value—£
Germany . . . . .	2,235	14,474
Belgium . . . . .	4,483	32,941
France . . . . .	1,258	12,341
U. S. A. . . . .	812	10,451

### British Paper Exports.

The quantity of printing paper, mostly of a good quality, exported during August from the British paper mills were as follows:

	Cwts.	Value—£
France . . . . .	3,260	15,240
U. S. A. . . . .	812	7,694
South Africa . . . . .	10,022	48,527
India . . . . .	25,419	123,212
Straits Settlements . . . . .	1,095	5,039
Ceylon . . . . .	2,634	11,286
Australia . . . . .	19,173	68,331
New Zealand . . . . .	5,767	23,948
Canada . . . . .	77	1,023
Other Countries . . . . .	30,010	142,485

A total of 98,269 cwts. at £446,785, compared with 25,591 cwts. at £95,523 in August 1919 and 151,407 cwts. at £143,944 in August 1918.

### Swedish Paper Mill Ablaze.

News has reached London that the Forssa paper mill in Sweden was partly burnt. It has 17 machines with an output of 10,000 tons a year of boards and wood pulp in addition to other products.

### Wood Pulp Contract Note.

It is proposed to revise the contract note usually recognized by pulp and paper men. Times have changed so much that the pulp men think the note should also be changed. They are now tackling it, but Scandinavia will have something to say about it!

The Committee on Standard Methods of Testing Materials is planning to send out in the near future standard samples to the laboratories represented in that association for analysis by them by the method which has been proposed by the committee in the past. These samples we expect to get out in the course of the next few months, and as they come to your various mills and laboratories, we shall endeavor to write a personal letter to some man who is represented there in the Technical Association or who represents the Technical Association there, and we ask your co-operation in following as closely as possible the method that has already been outlined by the Committee on Soda Pulp and reporting as promptly as possible to the committee. We hope in that way to get actual complete results of the methods and know then definitely that we can present the method to the association.

I am afraid that a good many of the methods have never been used and never tried out. We hope to make you familiarize yourselves with the method, and get a report from you on the standard sample that we send up.

These reports will be fathered very carefully, and the committee hopes at the annual meeting to present a list of the results we get from these standard methods, and to present to you for definite adoption, until such time as it seems necessary to amend the method, a method that may be considered as a standard method of the Technical Association for testing a certain raw material. These standard methods of course will have to be revised as we go further along, and it seems to me, although they may only last for a year or two years, or whatever time may be, it will be very well to have a method adopted by the Technical Association as a standard, realizing, of course, that that standard may not be permanent. Very few of our standards are permanent anywhere we go in life; but if we have something to form a standard method that in case of any dispute can be gone at as a standard method and settled on, I am sure that the method will be near enough to being perfected so that it can be adopted as a standard method of the Association.

#### Report of the Committee on Sulphite Pulp.

The report of the Committee on Sulphite Pulp was made by W. E. Byron Baker, chairman, as follows:

Mr. Chairman and Gentlemen: The Sulphite Pulp Committee can not do much more than report progress at this meeting. It may be interesting, though, if we outline to a certain degree the lines we are working along. We hope to investigate the possibilities of taking certain economies in steam consumption in the sulphite process by the investigation of results obtained by new methods of steaming the digester with an apparatus that has been used in Europe for some time, and will shortly be introduced into America, I understand. They call it there a vapor accumulator, or steam accumulator, consisting of hardly anything more than a large magazine, into which all the boilers generate steam, and from that point the digesters are used as they go on and off. You will therefore have a larger steam reserve, and drops in pressure will be less on the supply line when any particular digester goes on.

Other things that will be investigated and reported upon are the effects of an iron concentration of liquor, and that will include the methods and possibilities involved in the use of liquid  $SO_2$ . By products are also

to be investigated, and in the near future we expect to report on some new findings in that line.

The subject of control of sulphite process is receiving some attention, and it depends very largely on the accuracy with which we can control a digester, and also any improvements advanced, that we make in the future, in my opinion, will depend largely on being able to check the speed of cooking, and that depends on the development of certain analytical methods which we are undertaking at the present time.

Something that may be of great interest to the Association at this time is the fact that we have gotten into contact with Mr. Kalason, of Stockholm, and I am sure that all of the members of the association are well acquainted with the research work, or at least partially acquainted with the research work of Dr. Kalason in past years, and he is of course regarded as a high authority in Europe. A good many of us are familiar with the controversies between Professors Kalason and Amin on the control of sulphite cakes, formation of sugars, and many other investigations. The Sulphite Committee has undertaken to publish in English those reports made originally in Swedish by those people, and I am sure that they will be very interesting. Dr. Kalason informed us just a few days ago that his most recent researches on the constitution of woods in general will be published in Sweden in about two months. He has also agreed to let us have a manuscript copy and permit us to publish them at essentially the same time as they are published in Sweden.

In closing I want to state that the Sulphite Committee in the near future expects to send out some inquiries to various mills on certain phases of process control. I hope that the inquiries which we send out will receive careful attention and prompt replies, because while I would like to express the same sentiments that Mr. Spence has expressed, I desire to say that if the Sulphite Committee is to be at the service of the entire Association, it is equally as important that the entire Association is at the service of the Sulphite Committee.

The T. A. P. P. L. banquet held on Wednesday evening in the large main dining room of the Grand Union Hotel was an unusually enjoyable affair. Much of the credit for this is due to Frank T. E. Sisson, manager of the Racquette River Pulp and Paper Company of Potsdam, N. Y., who was in charge of the banquet entertainment and who saw that things were kept lively from beginning to end. During the courses of the savory dinner high class cabaret artists and chorus singing added greatly to the enjoyment of the occasion and just previous to the after dinner speaking George Caruthers, president of the Interlake Tissue Mills Limited, of Toronto, Ont., told one of his best Scotch dialect stories and J. N. Stephenson, editor of the **Pulp and Paper Magazine** of Canada, also related one of the good stories with which he is always so abundantly supplied.

The next speaker was George W. Sisson, Jr., president of the American Pulp and Paper Association, who spoke well on the obligation of the United States to function internationally in an economic rather than a political capacity. Mr. Allen Curtis, manager of production of the International Paper Co., and Dr. Hugh P. Baker, Secretary of the American Paper and Pulp Association also made brief and interesting remarks.



# UNITED STATES NOTES

Everett W. Morgan, of the Pneumatic Scales Corporation, speaking last Thursday, at a meeting of the American Institute of Chemical Engineers in connection with the Chemical Exposition at New York City, suggested the substitution of metal for wooden shipping cases as a means of helping to end the newsprint shortage. Six million cords of wood were made into shipping cases last year, said Mr. Morgan. If a general agreement could be reached to pack goods only in metal cases, he declared, the amount of wood thus released could be converted into enough newsprint paper to alleviate present famine conditions. One ton of newsprint paper can be made from one and a half cord of wood, and the 6,000,000 cords used in packing cases, if turned over to the pulp mills, would make over 4,000,000 tons of newsprint, which is twice the amount of print paper now being manufactured.

**Advertising and Selling**, the weekly magazine of marketing, has been purchased by J. H. Hopkins, until lately manager of **Printer's Ink**, and for twelve years with that publication. Mr. Hopkins, who for about a year has been president of Advertising and Selling Co., Inc., has purchased the entire interests of William B. Curtis, president of the Curtis business papers. Among the Curtis papers is **Paper**, until recently the official organ of the Technical Association of the Pulp and Paper Industry.

Reports from Norway indicate increased activity on the part of American purchasers of Norwegian wood pulp, cellulose and paper. American buyers who depend almost entirely upon Canadian supplies found themselves rather late in the Norwegian markets when American stocks began to ebb, but nevertheless many contracts have been made in the last few months. The exchange rate, of course, has been exceedingly favorable to American importers.

L. F. Hayward, one of the best known sales managers in the paper trade, has resigned as manager of the American Writing Paper Company's New York office to join the sales organization of the Royal Card and Paper Company. Mr. Hayward holds a record of twenty-one years continuous service in the sales department of the American Writing Paper Company, whose forces he joined after having been previously affiliated with the old Nonotuck Paper Company, the Valley Paper Company and the Linden Paper Company. Mr. Hayward will have supervision of the sales department of the Royal Card and Paper Company, and he is to act in an advisory capacity as to purchase, management, etc. He takes up his new work about the middle of next month.

The Purpus Fibre Products Company, established about a year ago in Dayton, Ohio, to engage in the manufacture of paper milk bottles, and the "San-I-Deal" fibre containers for cream, butter, oysters, cottage cheese, horseradish, cereals, salted nuts and other foodstuffs, has been meeting with so great a demand for its products that preparations are now being made for an increase in capital so that branches may be started in many cities. By thus branching out, it is intended also to affect a reduction of shipping charges

and to facilitate the filling of orders in distant sections of the country. Although the new locations have not yet been determined, it is known that plants are to be established in the East and the West, while the larger cities of the Middle West will be supplied locally. Hugo Purpus organized the company last year, heading it as president. His associates are Dr. O. C. Griep, vice-president; B. B. Cundiff, secretary; Edward Luthman, treasurer and William J. Seifried, general manager. The milk containers have found considerable favor with health departments, as it has been found that milk does not collect bacteria as speedily when contained in a fibre bottle as in the old style glass bottle owing to the complete shutting out of light. Another point in favor of the fibre bottle is that it can be used but once and is therefore more desirable for sanitary reasons than the glass bottle which may be used again and again.

Another 100 per cent stock dividend was declared recently by the Orono Pulp & Paper Company of Bangor, Me. This is but another sign of the prosperity that is general among the pulp and paper mills of Maine.

Reports from Wisconsin show that there is much prosperity also this year for paper mills making tissues and toweling papers. The Northern Paper Mills Company of Green Bay has just completed the biggest year in its history. The capital stock of the company has been increased from \$500,000 to \$2,000,000, primarily to declare a 100 per cent stock dividend. Expansion plans include the construction of a soda pulp mill at Ontonogon, Mich. A large addition to the mill at Green Bay is now being completed and other enlargements are contemplated. The company has enough orders on its books to keep it in operation for months and there is no sign of a slackening up of demand.

A sample suit made by a paper suit manufacturer in Neenah, Wis., was exhibited last week at the Chemical Industries Exposition in New York in the booth of the Paper Mill and Wood Pulp News. This paper garment looks like a fair competitor for the product of cloth. It is extremely light in weight, a dark blue in color, and to appearance very durable. At a short distance one easily mistakes it for a suit of tweed. This exhibit is claiming much interest from visitors to the exposition.

According to a despatch from the Berlin correspondent of a New York daily, newspaper and periodical publishers in Germany are now able to buy print paper at three cents a pound and the supply is said to be exceeding the demand, and as a result German manufacturers are hoping to sell to America if they can get the government to grant the necessary export permits. One large sale contract for 300 car loads, says the report, has just been placed in the United States.

Everything depends upon the point of view. You couldn't convince a mouse that a black cat was lucky.

Swallowing your indignation will not satisfy your thirst for revenge.

# PULP AND PAPER NEWS

Mr. David F. Robertson of Montreal, General Manager of the Canada Box Board Company, was in Toronto this week on a visit to the Toronto manager, Mr. James Logie. During his stay in the city Mr. Robertson called on the company's customers and discussed with them the various problems connected with the industry.

Premier Drury's hope that the Government would be able to make a final decision this week in regard to the application of the Backus interests for the English River pulp limits did not materialize. The cabinet put in several hours threshing out the matter, but when the meeting broke up it was stated that a decision had not been reached. It is understood that there are certain power questions upon which the Government desires enlightenment before committing itself. F. A. Gaby, chief engineer of the Hydro Commission, was called into consultation but the Government wants to have a talk with Sir Adam Beck. The opinion prevails that the Government will make it possible for the American pulp manufacturer to get the limit subject to certain safe-guards.

J. G. Glaseco, manager of the Winnipeg Light and Power Department, is expected in Toronto in a few days to oppose the proposition of the Backus interests who want unrestricted control of the White Dog Falls on the Winnipeg River in Ontario and so menacing the Winnipeg Hydro plant by interfering with the flow of water.

The Toronto office of the Rolland Paper Co. Ltd., in the Bank of Hamilton Building, Toronto, has been completely renovated and equipped with new furnishings throughout, thus providing a particularly inviting headquarters for Manager Haney.

The Toronto office of the Canadian Barking Drum Company reports the recent sales of one drum each to the following companies, through their Toronto and Chicago offices: Hummel-Ross Fibre Corporation, Hopewell, Va.; Northern Fibre Co., Autauga, Mich.; Detroit Sulphite Fibre Co.; and to the new plant of the Nipigon Fibre Co., Nipigon, Ont.

Industrial Planning, Limited, a Canadian branch of Industrial Planning Corporation, engineers, Buffalo, has been organized and has opened offices at 60-67 Front Street, W. Toronto. The company specializes on the designing of pulp and paper mills, fibre mills, etc., and their work takes in various other activities in the planning and engineering fields. The President of the company is Herbert H. Leonard and the Vice-President and General Manager is Stephen E. Prebel. The Canadian company is capitalized at \$20,000. The Toronto office will be in charge of Mr. Prebel.

Some reorganization is being planned in the Department of Lands and Forests of the Ontario Government. The Deputy Minister, Albert Grigg, is to be relieved of some of his heavy duties by the appointment of a Superintendent of Woods and Forests. E. J. Zavitz, who is at present head of the Forestry Branch, will be appointed to the new position at a salary of

\$4,500. He will bring the Forestry Branch under the new head and will be given an assistant, who has not yet been named. The Woods and Forests branch was formerly under a head clerk directly under the Deputy Minister. Other minor changes are contemplated to fit into these arrangements.

The Northern Pulpwoods and Transport Company, Limited, has been organized and granted a charter by the Ontario Government authorizing the company to get out, manufacture and deal in lumber and pulp products. The capital stock is placed at \$500,000. Toronto lawyers are mentioned as the incorporators.

Port Arthur is in line for another pulp mill. A delegation from that city has arrived in Toronto to interview the Ontario Government in regard to the purchase of a timber limit for the Pidgeon River Lumber Company. The company promises to erect a pulp and paper mill in Port Arthur if it can negotiate the timber limit.

Many in the paper trade were interested in the marriage of Miss Lucille, daughter of Mr. Alex. Buntin, of the Buntin Reid Company, Toronto, to Mr. William F. Phillips, the ceremony being performed by Rev. Dr. Cody at St. Paul's Church, on September 22nd.

A meeting of the book and writing paper section of the Canadian Paper Trade Association was held in Toronto this week to arrange for the annual meeting of the Association to be held in Toronto on October 6 and 7.

Hon. R. H. Grant, Minister of Education at Toronto, has announced that he will ask for the appointment of a commission to look into the losses of the text-book publishers sustained during the war in the publication of school text-books. The publishers, when their contracts ran out during the war period were requested to continue in the publication of the text-books on the understanding that their extra costs, etc., would be looked into later. Losses are said to have been sustained by the publishers.

The Mr. C. D. Howe who is connected with the Kamistiquia Pulp and Paper Co., is an engineer and not the well known forester, Dr. C. D. Howe of the University of Toronto.

The regular quarterly meeting of the Provincial Paper Mills, Limited, was held in Toronto this week. Among the directors in attendance from outside were the following: C. A. Peck, W. M. Loveland, S. M. Munroe and A. B. Connable of Kalamazoo.

Mr. L. H. Weldon of the Provincial Paper Mills, Limited, has gone on a hunting trip in the French River district. He was accompanied by Mr. A. G. Pounsford of the Port Arthur Paper Co.

D. G. P. Sanderson, has severed his connection with the Dryden Pulp and Paper after eight years' service, having accepted a position as superintendent of the 20,000 horse power hydro-electric plant of Price Bros. & Co., at Chutes-des-Saleys, near Chicoutimi, P.Q.

Mr. Sanderson has held a prominent part in public life in Dryden, as a member of the Council, as well as chairman of various civic departments.

### TRIBUTE TO H. C. COURTNEY ON DEPARTURE.

Mr. H. C. Courtney, Director and Superintendent of the Howard Smith Paper Mills, Limited, since its inception eight years ago, has severed his connection with the company, and will now devote his whole time to the installation of the Barber Dry Loft, of which he is part owner. The occasion of his departure from Beauharnois was marked by a touching tribute of friendship and appreciation of the three hundred employees who gathered in the finishing room and presented him with a beautiful walking stick and a set of pipes, and to Mrs. Courtney, a solid gold handled silk umbrella. Rev. Canon Noyveu, Pastor of Beauharnois, who was the guest of the employees on the occasion, paid a glowing tribute to the worth of Mr. Courtney and said that his departure would be a serious loss to the community. Mr. H. S. Furringer, who is Mr. Courtney's successor, made a very graceful presentation speech, and in the course of his remarks, expressed his appreciation of the cordiality and the good will shown by Mr. Courtney, to make his new duties as pleasant as possible. Mr. Courtney was very much affected, and in a feeling manner thanked the employees for their loyalty and co-operation which they gave to Mr. Howard Smith and himself in developing the present splendid position of the company, stating that President Smith arose from the ranks through his own sterling worth, hard work, and perseverance, and that so long as Mr. Smith was president of the Company, the employees could rely on him for a square deal. As for himself he regretted to leave them, but owing to climatic conditions and the health of his family he was forced to make a change, and he urged that the same loyalty and co-operation which he enjoyed would be bountifully bestowed upon Mr. Furringer, and that appreciation and good will always be the reciprocal relations between the employees and the management.

### WE ARE WASTING TOO MUCH TIMBER?

In the virgin pulpwood forests of Ontario, a balsam tree 10 inches in diameter at breast height is, on an average, 90 years old, with a total volume of 14.6 cubic feet. White spruce of the same diameter is 114 years old, with a total volume of 14.9 cubic feet. Black spruce is 144 years old, and has volume of 14.7 cubic feet. Seedlings grown in a nursery, and transplanted in the open, will make a much better growth than those in the virgin forest, but, even if they reach a diameter of 10 inches in 40 years less time, it would still make the total age 50 years for balsam, 74 years for white spruce, and 104 years for black spruce. It is advisable, therefore, that, in all logging operations, the fullest utilization possible be made of every tree cut, and that every precaution be taken to avoid injury to those left standing, in order that they may produce a second crop in the shortest possible time.

Where logs of only one length, 16 feet, are being cut for pulpwood, there is a loss, due to waste in stumps and tops, of 25 per cent. of the total volume of the tree in balsam, 14 per cent. in white spruce, and 20 per cent. in black spruce. These figures are based on actual measurements, where the stump height averages about 18 inches. Where winter cutting is done, stumps cannot be cut much below 18 inches, owing to the depth of the snow, but the waste in tops can be reduced by cutting to smaller top diameters. This would necessitate the cutting of different lengths of logs, say, 10, 12, 14 and 16 feet, the increased cost of which

would be more than offset by the greater production per acre. A 3-inch top diameter makes a gain over the 4-inch of one cord for every 223 trees, a gain over the 5-inch diameter of one cord for every 89 trees, and over the 6-inch diameter of one cord for every 53 trees.

The short logs in water will not support a man's weight, and may, therefore be harder to drive but on the other hand because they dry out more quickly they float higher in the water than the long lengths and are not so liable to form jams.

Cutting shorter log-lengths increases the number of cords which may be cut per acre; it lengthens the cut of any given area; it gives the unmerchable trees that much more time in which to grow to a size sufficient to enable the area to be cut a second time, and it decreases the fire hazard through the fuller utilization of the tops. The answer is, "We are".

### TARIFF PROTECTION BEST FOR CANADA.

The Canadian Manufacturers Association has issued a pamphlet presenting in convincing manner the need of some measure of protection for Canadian industry. Copies can be had from the Toronto office of the Association. Following is a summary of the reasons why Canada should retain the present fiscal policy of adequate protection for Canadian agriculture, industry, labor and business:

1. Canada has shown wonderful growth in agriculture, manufacturing, forest production, mineral production, transportation, banking, insurance, and other business since the adoption in 1878 of the National Policy of adequate protection for all classes.

2. Because Canada was strong in all departments of national activity, she made a great record in the war.

3. Since the war practically all civilized countries have retained or increased their protective tariff.

4. Over 2,000,000 Canadians are supported by wages paid by Canadian factories.

5. Over eighty per cent. of all the produce of Canadian farms is consumed in Canada.

6. The tariff has caused over 600 branches of United States factories to locate in Canada.

7. The tariff provides a great portion of the revenue of the Dominion Government.

8. The present tariff of Canada is very moderate; the average rate of duty on all dutiable importations is 22½ per cent.; the average rate of duty on all importations, free and dutiable, is only 14-2-3 per cent.

9. Canadian products should not be exported in the raw state, but should be manufactured in Canada in order to create business, provide employment and add to the national wealth.

10. Canada has maintained a protective tariff for 42 years. The United States, our greatest competitor, has maintained a protective tariff for 131 years. Their manufacturers have a home market of 105 million people. Our manufacturers have a home market of about 8 million people. Last year each inhabitant of the United States bought, on the average, \$4.41 worth of Canadian goods, while each Canadian, on the average, bought \$100.26 worth of United States goods. United States' purchases from Canada were largely raw material. Is it surprising that the rate of exchange is against Canada and that our dollar is at a heavy discount in the United States? This is the situation with a Canadian tariff. What would it be if the tariff were removed? Abolish the tariff, and in the words of Ex-President Taft, Canada will become "an adjunct of the United States."





# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Sept. 25.—Aside from a five per cent increase in the price of shipping tags, and a half a cent rise in kraft paper, the week has produced no changes in the market prices of papers while pulp products remain about the same with a slight easing-off tendency in pulp, especially groundwood pulp. Generally speaking there has been no falling off in trade, with the possible exception of the boxboard industry in which there is a slightly lessened demand for the product, although the mills have all the business they can conveniently handle. In other lines, especially book and the cheaper grades of bond papers, there is a distinct shortage and jobbers are unable to get sufficient supplies to satisfy their customers. There are some signs, however, that the use of paper is gradually decreasing although not to a degree that is affecting the prosperity of the trade. A number of lines of industry that use cartons for their goods, paper to line the cartons and wrap boots and shoes, and paper to wrap furniture, are going through a quiet period and this naturally affects the demand for some lines of paper. It is estimated, however, that there could quite easily be a reduction of twenty-five per cent in the quantity of paper being used without materially affecting business at the mills. However this may be, paper salesmen are looking forward to the time when salesmanship will once more become a pursuit after business instead of a mere routine job where the salesman has to act as mediator between the mill and the customer with considerable wear and tear on his nervous system. The chief duties of the paper seller these days are to book orders over the telephone and by correspondence and then proceed to nurse his customers along over the trying period of delays and broken promises occasioned by the big pressure of business at the mills. Salesmen generally are scanning the horizon for some sign of the coming era when they will be on the road again with their little sample cases.

**PULPWOOD**—Although a large amount of wood is being offered prices still remain high. Peeled spruce is quoted at from \$18.00 to \$20.00 per cord, depending on the freight and unpeeled is ruling at from \$12.50 to \$14.00 and poplar at \$13.00 to \$14.00 per cord, all f. o. b. ears. Contractors say that there will not be much change in the general situation until the early winter and then it will depend upon the ear situation and the general commercial conditions prevailing in the country. The ear situation has been improving somewhat and will probably continue to improve with the result that there will be a more rapid movement of pulpwood. As conditions are at present, however, many of the mills hesitate to come into the northern part of Ontario for wood owing to the fact that it has to be paid for when it is stacked up at the points of shipment and when there are no ears to take it out it means the tying up of their investment for a considerable period. It is pointed out that if the wood could be loaded into the ears as it is produced it would make a difference of \$1.25 per cord, apart from shrinkage. Conditions have no where reached that point,

however, nor are they likely to reach it until the balance of trade in ears between Canada and the United States becomes more equalized. Contractors say that a distinct improvement has been noted in this respect and ascribe the greater number of ears for the wood as being due to a lessened demand for ears following a period of depression in some lines of manufacture such as automobiles.

**PULP**—There is no change in the general situation as regards pulp and the mills are still experiencing the greatest difficulty in getting supplies. Groundwood pulp, although still very scarce, is a little easier in price and is selling at from \$130 to \$150 a ton, while unbleached is quoted at \$190 to \$200 and bleached at \$215 to \$200 a ton. Kraft pulp is still quoted at \$150 a ton and there is a good demand for it.

**BOOK AND WRITING PAPERS**—There has been a falling off in miscellaneous orders for book and writing papers although there are enough big contracts to keep the mills going for months ahead. Jobbers complain that they are unable to get anywhere near enough book paper to meet the demands of the trade, while it is a fact that one Toronto manufacturing stationer is faced with the closing up of one of his departments unless he can get freer shipments of a cheap grade of bond paper of which he uses large quantities in his business.

**ANOTHER RISE IN KRAFT**—Dealers were advised by the mills this week of another jump in kraft paper the advance representing half a cent over the old price of 12½¢. The new quotation is 13¢ a pound and there is a greater demand for the product than can be met, with any degree of promptitude, the mills still being a considerable distance behind with their orders.

**RAG AND PAPER STOCK**—New cotton cuttings were stronger this week with several increases in price noted. No. 1 white short cuttings advanced 2¢ a pound and other grades showed fractional advances. Old rags also showed a stronger tendency and higher prices are looked for shortly. The large importations of European mixed papers during the past week or so has steadied local prices as the mills are able to buy this stock laid down at the plant a fraction under current quotations. There are reports, however, that this grade will commence an upward march very shortly. Soft white shavings again advanced 2½¢ per cwt. and dealers are very cautious about commitments for future delivery. White blanks also registered an advance which brought No. 1 manila cuttings up a fraction also. Books continue weak with only a nominal demand from consumers.

	Per Cwt. F.O.B. Toronto
No. 1 shirt cuttings	\$23.00—\$24.00
No. 1 unbleached cotton cuttings	\$17.50—\$18.00
No. 1 fancy shirt cuttings	\$13.00—\$13.50
No. 1 blue overall cuttings	\$11.50—\$12.50
Bleached shoe elip	\$15.50—\$16.00
White cotton hosiery cuttings	\$16.50—\$17.00
Light colored hosiery cuttings	\$13.00—\$14.00
New light flannellette cuttings	\$14.50—\$15.00
No. 2 white shirt cuttings	\$13.50—\$14.00
City thirds and blues (repacked), No. 15	\$4.00—\$4.25

Flocks and satinettes . . . . .	\$2.00—\$2.25
Tailor rags . . . . .	\$2.00—\$2.10
Gunny bagging . . . . .	\$2.00—\$2.25
Manila rope . . . . .	\$5.75—\$6.00
No. 1 white envelope cuttings . . . . .	\$8.00—\$8.50
No. 1 soft white shavings . . . . .	\$7.50—\$7.75
White blanks . . . . .	\$6.00—\$6.25
Heavy ledger stock . . . . .	\$3.75—\$4.00
No. 1 magazine . . . . .	\$3.50—\$3.60
No. 1 book stock . . . . .	\$2.75—\$2.90
No. 1 manila cuttings . . . . .	\$5.50—\$5.75
No. 1 print manila . . . . .	\$2.50—\$2.65
Folded news . . . . .	\$2.35—\$2.50
Over issue, news . . . . .	\$2.50—\$2.75
Kraft . . . . .	\$5.50—\$6.00
No. 1 clean and mixed papers . . . . .	\$2.10—\$2.20

### NEW YORK MARKETS.

New York, September 25.—Demand from spot buyers for some grades of paper has developed an easier tone, yet the market as a whole shows little effect of this and continues in very nearly as strong a condition as recently. Manufacturers are occasioned scarcely any worry over the let up in buying in some quarters because most of them are so well foresold that a matter of this sort in the transient trade does not concern them to any appreciable extent. Whether or not paper prices will follow the downtrend in various commodities is a question. Most indications are that they will not, at any rate not for the next few months. Unless general business conditions become so forlorn that consumers of paper are obliged to cancel orders for paper in wholesale fashion, it would appear that paper mills are due to keep busily engaged for at least the balance of this year for the simple reason that most of them have the great bulk of their output sold up until that time. Undoubtedly the cutting of prices on automobiles, cotton and woolen goods and other commodities is the main reason behind the slackening of demand for some kinds of paper. Consumers of all varieties of products are inclined to hold off in buying for the moment in view of the price slashing in certain quarters, and it is but logical that users of paper are pursuing the common course.

Reports concerning the newsprint market are somewhat at odds. There are those traders who describe the spot demand for print paper as a good deal quieter, with prices evincing a downward trend at a current basis of 11 cents or slightly less for newsprint in standard rolls. There are many, on the other hand, who say they have much difficulty in obtaining fresh supplies of newsprint and that they are obliged to pay just as high prices as formerly. Taking all the reports at hand, it would appear that available supplies of newsprint in the open market are a bit improved in point of volume. Small buyers seem to be getting paper with less trouble and occasionally there are offerings indicating that stocks in at least some quarters are larger. Evidently this situation has been wrought solely by increased receipts of print paper from European sources. It is known that comparatively sizable tonnages of newsprint have come into the American market recently from Sweden, Norway and Finland, as well as Germany, and the probabilities are a portion of these shipments are seeking buyers, which accounts for the reports regarding price concessions emanating from some quarters. Taking the figures compiled and issued by the

News Print Service Bureau as a criterion, domestic supplies do not seem any larger. These statistics show that in August 44 domestic paper mills produced 181,344 tons of newsprint, of which 178,840 tons were shipped, leaving only about one per cent of production for stock. These figures become doubly impressive when it is considered that during August newsprint mills in the United States were running at 100.2 per cent of their daily average production during the production peak of 1919, in spite of which they were under the necessity of shipping practically their entire output for the month in order to fulfil contracts and keep customers supplied.

The contract basis for newsprint is firmly maintained at a range of 6.50 to 8 cents per pound. The average price for contract news at present is a fraction over 7 cents. Manufacturers say in nearly every instance they could readily secure additional orders were they willing to enter into further commitments, and this situation seems to be reflected by the omission of many columns of advertising by leading newspapers from nearly every issue.

Demand for the higher grades of bond paper is distinctly quieter. Mills making such paper are said to be switching to other grades, more often to cheaper lines of fine papers, which continue to move in consistently good volume. Prices on bonds, linens and ledgers hold firm and the increasing cost of production is creative of an upward tendency in quotations.

Coarse papers are not in as heavy demand as recently. Large buyers are reducing the tonnage of their orders, and small consumers are buying less frequently. There is a steady tone to prices, however, and no change of any moment has come about. Boards are in a quieter market position, due to a narrower demand from the paper box trade, and while mill quotations are maintained, there have been reports of transactions at slight recessions in prices.

GROUND WOOD.—The market for mechanical wood pulp evinces a softer undertone than has been noted in some time. Demand has eased off to an extent and indications are that improved weather conditions have permitted grinders in some localities to increase their production, thus making for larger available supplies. Another factor is that quite a few shipments of ground wood have been received from Scandinavia, and although these have not been of sufficient tonnage to affect the domestic market of themselves, such supplies have enabled certain consumers to keep out of the domestic market for a time. Prices range around \$130 per ton for spruce pulp of prime quality at grinding plants, and there have been reports of sales in out of the way cases down to as low as \$120.

CHEMICAL PULP.—Prices on chemical wood pulps are in a more or less stationary position at present. If anything, the tendency is downward, and instances have come to light where some lots of pulp, kraft in particular, have been sold at price concessions. Imports from Europe are the main controlling factor in the market. Manufacturers and dealers alike say that on this factor rests the future trend of values. Should pulp shipments from Scandinavia continue at the rate of the past few weeks, the probabilities are these foreign supplies will overload the market and act to depress prices. If, on the other hand, recent receipts of Scandinavian pulp represent nothing more than the shipments usually sent to this country from Scandinavia prior to the closing of the Baltic for the winter, and are not maintained, pulp values are likely



TRADE MARK  
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SOLE AGENTS in the United States, Canada, Mexico and Cuba for  
**Finnish Cellulose Association, Helsingfors, Finland**

comprising all and every Sulphite, Sulphate and Kraft pulp mill in Finland, Manufacturers of superior grades of Bleached and Unbleached Sulphites, Easy Bleaching Sulphates and Kraft Pulps.

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SOLE AGENTS in the United States, Canada, Mexico and Cuba for  
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**PULP**

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to be upheld on about prevailing levels because it is generally conceded that domestic manufacturers are not able to produce enough pulp to satisfy the requirements of papermakers at the present rate of consumption. No alteration in prices of any consequence has developed, quotations remaining at about previous ranges.

**RAGS.**—Prices on papermaking rags are firm but there is no especial activity in the market. Mills are buying reservedly, generally confining orders to rags directly needed, and with the exception of some grades of new cuttings, available supplies seem ample to fill the demand. At the same time, paper manufacturers are purchasing in sufficiently broad scope to sustain values, and in the case of certain grades, prices are decidedly on the uprend. New white shirt cuttings are very firm and are frequently quoted at 28 and 29 cents a pound although supplies are to be had a cent or two under these figures. It seems that consumers other than paper mills are absorbing these rags, with the result that papermakers are obliged to meet the prices asked to compete with other buyers. Fancy shirt cuttings are selling at around 14.50 cents, new unbleached muslins at 19 cents, new washables at 12 to 12.50 cents and new white lawns at 21.50 cents. Old whites are in fairly steady demand and are moving at a price basis of about 15 cents for No. 1 repacked whites, but other old grades are proportionately lower in price with repacked thirds and blues selling at 4.50 cents at shipping points and roofing rags at 2.50 cents.

**PAPER STOCK.**—Waste papers find a generally good sale among consumers and there is little change in price to report. Both high and low qualities are moving, and dealers lay much emphasis on the increasing difficulty experienced in securing normal amounts through collection sources. One of the strongest items at the moment is white blank news cuttings, which are commanding as high as 7.50 cents a pound at shipping points. White shavings are firmly held at about 9 cents for No. 1 hard and 8.25 cents for No. 1 soft white shavings, while colored shavings are selling freely at 5 cents a pound. Folded newspapers continue to bring 2.70 to 2.75 cents f.o.b. New York and No. 1 mixed paper between 2.10 and 2.20 cents.

**OLD BAGGING AND ROPE.**—There is practically no life to the old bagging market and supplies of this commodity can be bought at very near any price consumers choose to offer. No. 1 scrap bagging is available to mills at 2.50 cents and less at shipping points

and No. 1 gunny at 2.75 to 3 cents. Old rope is moving in fair volume and at steady quotations of between 6 and 6.50 cents per pound for No. 1 manila rope.

### THE PATRIOTISM OF PEACE.

In greeting the Conference of Canadian Clubs recently, Sir Arthur Currie, principal of McGill University, expressed the Canadian viewpoint on many present-day problems. His knowledge of Canadians was gleaned where no disguises were worn, on the field of battle, and he showed in this address, as he has shown in others, a rare understanding of the Dominion.

Few public men have summed up the vital duty of the hour more pointedly than Sir Arthur Currie did in saying:

"The Good Book teaches us that the laborer is worthy of his hire, but it also teaches that by the sweat of our brow do we eat bread."

The greatest evils of our time will be overcome only when the whole people learn to respect both these eternal truths. It will not suffice to concentrate on the first and neglect the second, nor yet to reverse the process and think only of getting out the labor. When the time comes that a fair balance is held between the two in shop and factory, office and farm, and when the justice of it is apparent to all, the demon Unrest will have perished.

Canada's greatest soldier has been in touch with patriotism. He knows it better than most who delight to speak the word. He has seen great proof given of the sentiment. He has been privileged to use the forces of sacrifice.

Once again, Sir Arthur Currie invokes the gold-pure Canadian spirit that he knew in the war. He urges his countrymen to remember how great a trust was given into their hands. He seeks to have a clearer expression than has come yet of the peace-time patriotism on which the stability and safety of Canada depends. To one so familiar with the war-time patriotism, the contrast between sacrifice and selfishness is vivid indeed.

Sir Arthur Currie's messages to the troops in the field have taken place with the soul-moving military papers of history. And now in another field of endeavor, facing again high responsibilities and baffling problems, he retains both the right and the ability once more to move his fellow-Canadians into action.

## Scandinavian American Trading Co.

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1813

NEW YORK

Write us when  
you have any  
surplus of

# Ground Wood

Bleached or Un-  
bleached. We are  
always in the mar-  
ket.

# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., Oct. 7th, 1920

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## TABLE OF CONTENTS

### Editorial :

Newspapers and forestry .....	1037
Technical Section in England .....	1038
Two good friends gone .....	1038

### Special Articles :

Curtailling bleach consumption by addition of sulphur to digester liquor ..	1039
The Allen automatic cooking control for chemical pulp .....	1041
Mould growths on wood pulp .....	1048

### News of the Industry :

Winthrop Murray Crane is dead .....	1040
Another Riordan party .....	1043
What T. A. P. P. I. did at Saratoga ..	1044
The prodigal sons entertained .....	1045
British trade news .....	1047
United States notes .....	1049

A. P. W. Co. looking for timber in Labrador .....	1049
N. Y. World buys Canadian pulp mill ..	1051
Pulp and paper news .....	1052
Kenora gets new Baekus mill .....	1053
Spanish River on 7 per cent basis .....	1053
A. G. Campion (portrait) .....	1053

### Miscellaneous Information :

Out of experience .....	1043
Dressing lets belts run slack .....	1043
Is your life insured? .....	1045
British Empire timber exhibit .....	1046
How paper is parchmentized .....	1046
Review of recent literature .....	1050

### The Markets :

Canadian trade conditions .....	1054
New York markets .....	1056

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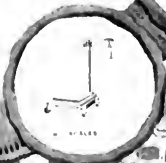
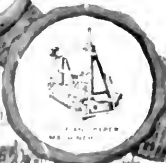
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The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for. Subscription to any address in Canada, United States and British Empire, \$5.00 yearly. Other Countries Postage Extra. Single copies, 15 cents.

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Our 100% quality mark is the outward symbol of all that this organization stands for. This seal not only marks the standard of quality of Fairbanks-Morse goods, but it represents the ideals of the organization and of the men whose service and advice are yours.

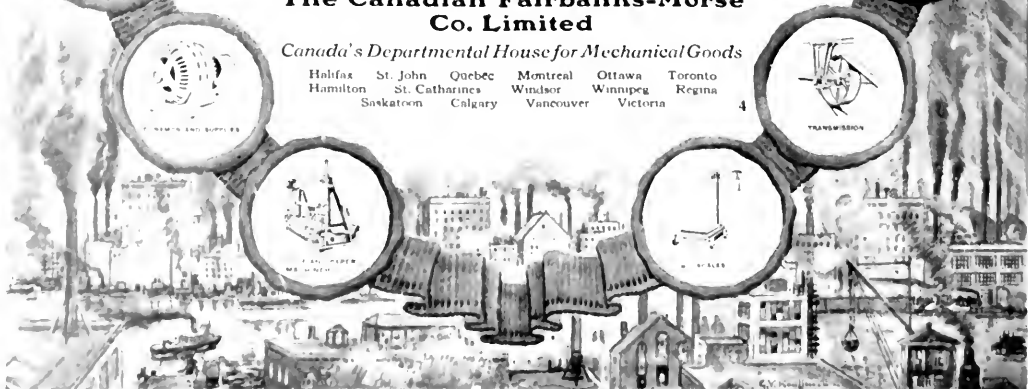
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Hamilton	St. Catharines	Windsor	Winnipeg	Regina	
Saskatoon	Calgary	Vancouver	Victoria		



# -:- EDITORIAL -:-

## NEWSPAPERS AND FORESTRY.

A very few years ago an editorial in a daily paper on the forestry situation was very unusual. Today such comment is rather to be expected. There are probably two reasons for the increasing frequency with which our daily papers are calling attention to the forestry situation and the necessity for conserving this important natural resource. The first reason is the instinct for self-preservation. Newspaper publishers are coming more and more to realize that their existence rests primarily on the supply of pulpwood from which newsprint is manufactured. They realize that unless proper measures are instituted at once there is every likelihood, in fact, there is practical certainty, that a comparatively few years will see the disappearance of the most prolific source of the raw material which is essential to the publication of a newspaper. The ever increasing cost of pulpwood in the ascending cost of paper and this is not without the ever decreasing convenient supply is reflected out its effect on the reading pages of our papers. Far-sighted publishers have looked into the matter and have come to realize that in a few years the question will not be one simply of price but will also involve the more important problem of finding a source of supply. Newspapers of this continent and even those in other countries are convinced that Canada is the natural producer of newsprint. So long as exaggerated estimates of the time when the present forest would be depleted did not fall within the probable life-time of publishers alive today, little heed was given to the prophets among the foresters who had the keener vision and little fear was felt regarding the ability to keep on increasing the size and number of papers. But since more careful estimates of the probable life of our pulpwood forests have been made and particularly since the end of many pulpwood areas in the United States is actually within sight and newsprint prices are steadily increasing due to scarcity and cost of material the publishers are taking a keen interest in forestry matters.

It is probable also that newspapers are realizing more and more their obligation as agents of instruction with regard to the conservation of our natural resources. While the matter of pulp and paper is the phase of forestry that most intimately affects the publisher, the amount of timber consumed in the manufacture of paper is small in comparison with the

quantity required for building operations. The burden of extra cost due to the scarcity of pulpwood is, however, sufficiently great to impress upon the newspaperman the need for conservation and the campaign, started with whatever motive and kept going for whatever realization of personal interest, has the beneficial effect of stimulating an all-round desire on the part of the public to maintain the productivity of the forest as an actual source of wealth, to say nothing of the forest as an absolute necessity in the production of commodities that are inseparably linked with modern civilization. The dependence of people today on the products of the forest is being more clearly impressed with the growing necessity and increasing prices for such materials. Public opinion should be stirred by such comment as has been appearing recently and an ideal is constantly kept before legislators which must have the effect of bringing about a knowledge of conditions that will be the basis for intelligent and constructive legislation and regulations.

The people of Canada and the United States have for so many years been fed up with the idea that the forests of this continent were inexhaustible that it is going to take a considerable time to unlearn a great deal and to start the public off on the right track. The movement is one that will require constant pushing with probably an occasional 'pull' but it is an effort that must be made and unless the present beginning is constantly and continually followed up there will certainly be difficulty before some of us are under the sod.

As mentioned before, a number of newspapers have undertaken this enormous task of educating the public. In time of disaster such as the all too frequent forest fires that have devastated large areas in both countries, it has been natural and easy for an editor to pen a rousing editorial, but to keep pegging away on a definite program is a more difficult matter. Such papers as the Detroit News, which published a series of articles early in the summer on the more important forestry topics as particularly applying to the State of Michigan, is a most commendable example. The Literary Digest for September 25th contains reference to articles in nine papers that are mentioned by name and refers to still others which have but recently given attention to this subject. These were all American papers and we are constantly seeing editorials and special articles in our

Canadian papers on this subject. The Canadian editorial campaign, we should like to believe, is, in part at least, due to the efforts of the Canadian Pulp and Paper Association and to such forest enthusiasts as Barjum, Black, Leavitt, Wilson, Howe, Piche, and others. It is not only a good cause but a necessary cause and when the public is made to realize that its own comfort, convenience and cash are largely involved there will be more definite action taken with regard to the conservation and scientific administration of our forest resources.

The New York Times and some others seem to place the weight of the burden on the Government and there is a tendency for some to belabor the central authority for not having taken action sooner. It must be remembered that no Government dares go very far in advance of its support from the public and the apathy of Congress, parliaments and legislatures is principally due to the lack of sufficient urge from behind. There is also to be considered the factor of the greed and selfishness of those who own or hope to control forest areas from which they may make a handsome profit. It is for the Government to protect the public both present and future against improper exploitation by such individuals. A difficult feature of the problem is that these very people are so frequently leaders in industry, commerce and public life. They often do an immense amount of good through their ability to organize and direct industry but they need education as to their obligations to the public quite as much as the public needs to be educated to the seriousness of the situation regarding our forest and other natural resources.

The newspapers have tackled a real live problem. We hope they will hold on.

#### THE TECHNICAL SECTION IN ENGLAND

Sometime ago announcement was made of the organization of a Technical Section of the British Paper-makers Association. The program for the October meeting, which is given this week in our British Trade News, is similar in many ways to the meetings of our own Technical Section which have proved of such interest and value to the members and to the industry. We expect to see the Technical Section on the other side grow and prosper as has the Canadian organization. The British Section has a number of enthusiastic technical men who have interested themselves in this organization, and it is largely on the maintenance of their enthusiasm that the success of the Section depends. It is interesting to observe the cordial relations among the technical men in England, Canada and the United States. Both the Canadian and American organizations are pleased to number among their members several Englishmen. If the

rules of the British Section permit it, we are sure the future will see on their lists the names of American and Canadian pulp and paper men. This international membership is a fine thing and should bring benefits to all concerned.

#### TWO GOOD FRIENDS GONE.

The editor was saddened this week by the news that two good friends had gone. Hon. Winthrop Murray Crane of Dalton, Mass., died last Saturday. Newspaper notices, for the most part, simply mentioned that Mr. Crane was former U. S. Senator. Mr. Crane was much more than that. He was whole-hearted American citizen as his ancestors had been for generations. He was a public servant, not only in discharge of duties of public trust as a State and Federal official, but in his private life as a director of many enterprises, and as a lifelong paper maker in a family that has been paper makers for at least one hundred and eighteen years. We are inclined to think that Mr. Crane's service to the public was even greater in the example of his fine character, which has been a great influence among the people of Massachusetts and even throughout the country. In a simple and unostentatious way Mr. Crane was a public benefactor, his particular hobby being to assist young people to get a start. The editor would thus acknowledge his personal obligation and gratitude for Mr. Crane's assistance during college years.

Our other good friend was Mr. A. G. Campion who died suddenly in Montreal a few days ago. The editor frequently dropped in at Mr. Campion's office for a friendly chat, and always found him enthusiastic over the prospects of the paper trade and a confirmed optimist. Mr. Campion's knowledge of the paper industry was very extensive, his observation was keen and his comment conservative. He was of frequent assistance to the Pulp & Paper Magazine, and his loss will be deeply felt.

#### CORWEBS.

From the enormous over-subscription of the recent offering of securities of the Anglo-Newfoundland Development Company in London it is quite evident that English capital is aware of the great possibilities in the pulp and paper industry on this side of the Atlantic. We venture to say that if properly presented, practically all of the new capital required for the extensions at present contemplated in Canada could be obtained in the world's financial centre. It is a long while since so many sound propositions were being started or extended, and it is small wonder that British capital should be attracted. There is an additional advantage in the need of the British market for Canadian paper. To paraphrase a well known quotation "Where thy money comes from, there will thy product tend to go."



# Curtailing Bleach Consumption by Addition of Sulphur to Digester Liquor\*

By GEORGE K. SPENCE, Chemist, New York and Pennsylvania Company.

There has been considerable discussion from time to time regarding the benefits to be derived from adding sulphur or sodium sulphide to digester liquor, and acting for your committee, the writer has handled one phase of this question by running a series of experimental cooks. These experiments were run over an extended period of time and under the varying conditions met with during the ordinary cooking of stock, so that they are representative of actual cooking conditions.

It is hardly possible to compare individual cooks without microscopical observations of the fibres in the finished sheets, and moisture tests of the chips used in each cook, as the mixture of woods used in the different digesters varies to some extent, and the moisture in the chips varies. As a general rule the average mixture of woods over an extended period of time is practically the same, and as the average moisture in the chips was 23.2 per cent during the experimental runs with sulphur and 22.8 per cent during the experimental runs without sulphur, the general average results are comparable.

The small experimental digester was packed with chips each time in the same manner as the large digesters, and the amount of chips used in each case was practically the same.

\* Read before the Technical Association of the Pulp and Paper Industry at the Fall meeting in Saratoga Springs, N. Y., Sept. 1, 1920.

Before making this comparison it was necessary to make some standard sheets of both brown stock and white stock in order to grade the sheets of pulp made from the stock during the experimental runs.

The brown stock standards were made by selecting an extremely well-cooked, light colored sample and marking sheet made from it No. 1, then selecting a shivy, dark-colored cook and marking a sheet made from it No. 10, after which samples were selected between these two extremes and sheets made from the graded from No. 1 to No. 10. These standard sheets were used in grading all sheets made from brown stock during the experimental cooks, as expressed in column 12 of tabulations given below.

The white stock standard sheets were made by treating an average hardwood brown stock with varying amounts of bleach. On one sample bleach was used at the rate of 17 pounds of 35 per cent powder per 100 pounds of stock, and sheet made from same selected as a 100 per cent bleached color. On another sample of the same stock, bleach was used at the rate of 8.5 pounds of 35 per cent powder per 100 pounds of stock and sheet made from same selected as a 50 per cent bleached color. In this same manner a complete set of standard sheets was made by varying the amounts of bleach on samples of the same brown stock and sheets made from them given their relative values in per cent bleached color. The same bleaching temperature was used in each case. These standard sheets were used in comparing sheets made from stock during

EXPERIMENTAL SODA MILL COOKS.  
Without Use of Sulphur.

Cook Number.	Gallons of Liquor Used.	Sp. Strength of Liquor.	Capacity of Liquor.	Per Cent Salt in Liquor.	Average Steam Pressure, Lbs.	Hours Shut in.	Hours at Full Pressure.	How Digester Discharged.	Hours in Wash Pan.	Temp. of Stock When Bleach Was Added.	Color of Stock.	Pounds of 35% Bleach per 100 lbs. of Stock.	Temp. at End of Bleaching.	Color With Direct Starch.	Color of White Stock.
3	45	11 1/2	94.8%	.99	109	0	4 1/2	O. K.	2 hrs. 35 min	72 1/2° F.	No. 6	15 1/2	128 1/2° F.	Light Blue	100%
4	45	11 1/2	94.8%	.99	108	0	4 1/2	O. K.	2 hrs. 40 min	72 1/2° F.	No. 4	11 1/2	123 1/2° F.	Light Blue	88 1/2%
5	44	11 1/2	92.5%	.99	110	0	4 1/2	O. K.	2 hrs. 40 min	80° F.	No. 6	11 1/2	113° F.	Light Blue	84 1/2%
6	44	11 1/2	94.6%	.99	110	0	4 1/2	O. K.	2 hrs. 35 min.	72 1/2° F.	No. 6	12 1/2	118° F.	Light Blue	82%
7	43	11 1/2	92.1%	.99	112	0	4 1/2	O. K.	4 hrs. 40 min	72 1/2° F.	No. 7	15 1/2	113° F.	No Color	86%
8	43	11 1/2	91.9%	.99	112	0	4 1/2	O. K.	4 hrs. 0 min	82 1/2° F.	No. 6	12 1/2	113° F.	No Color	83 1/2%
9	42	11 1/2	92.4%	.99	112	0	4 1/2	O. K.	4 hrs. 0 min	84° F.	No. 5	9 1/2	125 1/2° F.	Light Blue	65%
10	43	11 1/2	94.1%	.99	117	12	4 1/2	O. K.	3 hrs. 40 min	78° F.	No. 5	16 1/2	133° F.	No Color	80%
11	43	11 1/2	93.0%	.99	116	0	4 1/2	O. K.	4 hrs. 30 min	82° F.	No. 8	13 1/2	134° F.	No Color	70%
12	44	11 1/2	95.7%	.99	116	0	4 1/2	O. K.	3 hrs. 20 min	72 1/2° F.	No. 6	10 1/2	127° F.	No Color	65%
13	45	11 1/2	92.5%	.99	116	0	4 1/2	O. K.	4 hrs. 35 min	78° F.	No. 7	11 1/2	124° F.	Light Blue	70%
14	44	11 1/2	96.6%	.99	116	0	4 1/2	O. K.	4 hrs. 55 min	70° F.	No. 8	11 1/2	126° F.	No Color	65%
15	44	11 1/2	96.8%	.99	116	0	4 1/2	O. K.	4 hrs. 0 min	78° F.	No. 7	11 1/2	128° F.	No Color	70%
16	44	11 1/2	92.1%	.99	117	0	4 1/2	O. K.	5 hrs. 35 min	73° F.	No. 10	14 1/2	121° F.	No Color	60%
17	44	11 1/2	94.5%	.99	118	0	4 1/2	O. K.	6 hrs. 35 min.	83° F.	No. 10	15 1/2	121° F.	No Color	72%
18	43	11 1/2	94.5%	.99	118	0	4 1/2	O. K.	5 hrs. 10 min	83° F.	No. 8	12 1/2	118° F.	No Color	60%
19	43	11 1/2	92.3%	.99	119	0	4 1/2	O. K.	4 hrs. 55 min.	84° F.	No. 7	10 1/2	118° F.	No Color	62%
20	43	11 1/2	93.8%	.99	118	0	4 1/2	O. K.	5 hrs. 25 min	80° F.	No. 8	14 1/2	131° F.	No Color	73%
21	45	11 1/2	92.5%	.99	117	0	4 1/2	O. K.	4 hrs. 35 min.	81° F.	No. 8	12 1/2	126° F.	No Color	68%
22	45	11 1/2	92.8%	.99	116	0	4 1/2	O. K.	4 hrs. 20 min	80° F.	No. 6	11 1/2	137° F.	No Color	75%
23	43	11 1/2	95.5%	.99	116	0	4 1/2	O. K.	4 hrs. 35 min.	81° F.	No. 5	11 1/2	128° F.	No Color	85%
24	43	11 1/2	93.6%	.99	116	0	4 1/2	O. K.	4 hrs. 5 min	80° F.	No. 4	9 1/2	118° F.	No Color	77%
25	42	11 1/2	93.6%	.99	118	0	4 1/2	O. K.	4 hrs. 30 min.	81° F.	No. 7	11 1/2	125° F.	No Color	70%
26	44	11 1/2	95.6%	.99	114	0	4 1/2	O. K.	5 hrs. 0 min	80° F.	No. 9	13 1/2	122° F.	No Color	60%
27	44	11 1/2	95.6%	.99	109	0	4 1/2	O. K.	5 hrs. 35 min.	84° F.	No. 9	14 1/2	120° F.	No Color	62%
28	44	11 1/2	93.6%	.99	118	0	4 1/2	O. K.	5 hrs. 30 min.	82° F.	No. 6	10 1/2	115° F.	No Color	60%
29	42	11 1/2	93.6%	.99	110	0	4 1/2	O. K.	5 hrs. 30 min.	83° F.	No. 7	14 1/2	115° F.	No Color	68%
30	43	11 1/2	94.8%	.76	110	0	4 1/2	O. K.	3 hrs. 20 min.	83° F.	No. 7	10 1/2	115° F.	No Color	52%
31	44	11 1/2	94.8%	.76	110	0	4 1/2	O. K.	3 hrs. 30 min	85° F.	No. 7	11 1/2	118° F.	Light Blue	68%
32	43	11 1/2	94.8%	.76	109	0	4 1/2	O. K.	3 hrs. 25 min.	84° F.	No. 7	11 1/2	122° F.	No Color	70%
33	43	11 1/2	94.8%	.76	109	0	4 1/2	O. K.	3 hrs. 30 min.	86° F.	No. 7	14 1/2	130° F.	No Color	83%
34	42	11 1/2	94.8%	.76	109	0	4 1/2	O. K.	3 hrs. 35 min	83° F.	No. 5	9 1/2	116° F.	No Color	72%
35	44	11 1/2	94.8%	.76	110	0	4 1/2	O. K.	3 hrs. 40 min	46° F.	No. 6	10 1/2	120° F.	No Color	70%
36	44	11 1/2	94.8%	.76	110	0	4 1/2	O. K.	3 hrs. 45 min	83° F.	No. 2	11 1/2	132° F.	No Color	70%
37	44	11 1/2	94.8%	.76	110	0	4 1/2	O. K.	3 hrs. 40 min	82° F.	No. 7	11 1/2	120° F.	No Color	70%
Average	43.4	11 1/2	91.2%	.94%	113	1.34	4 1/2	O. K.	4 hrs. 12 min	81 1/2° F.	No. 6.83	12.2	123.4%	No Color	72.3%

experimental cooks and each given its relative value, as expressed in the last column of tabulations given below.

Table No. 1 gives results obtained during thirty-five experimental cooks in which no sulphur or sodium sulphide was used.

Table No. 2 gives results obtained during thirty-five experimental cooks in which sulphur was used at the rate of 1.1 pound per 100 pounds of stock cooked.

The summaries of the above tables can be compared as follows:

	Average	Without Use of Sulphur	When Using Sulphur
Gallons of liquor used.....	43.4 gallons	42.75 gallons	42.75 gallons
Be. strength of liquor at 60° F.	114.2° Be.	114.2° Be.	114.2° Be.
Causiticity of liquor.....	91.2%	91.2%	94.11% plus 9% sulphidity
Per cent salt in liquor.....	.94%	.94%	1.05%
Steam pressure.....	113 Pounds	110 Pounds	110 Pounds
Hours shut in.....	1 hr. 20 mins.	1 hr. 14 min.	1 hr. 14 min.
Hours at full pressure.....	4 1/2 hrs.	4 1/2 hrs.	4 1/2 hours
How digester discharged.....	O. K.	O. K.	O. K.
Hours in wash pan.....	4 hrs. 12 mins.	3 hrs. 54 min.	3 hrs. 54 min.
Temperature of stock when bleach was added.....	81.25° F.	84.9° F.	84.9° F.
Color of brown stock.....	No. 6.83	No. 6	No. 6
Pounds of 35% bleaching powder per 100 pounds of stock.....	12.2 pounds	11.74 pounds	11.74 pounds
Temperature at completion of bleaching.....	123.4° F.	126° F.	126° F.
Color of white stock.....	72.93%	74.7%	74.7%

The cooks in which sulphur was used had a slight advantage of .84 per cent in total causticity and sulphidity and about 18 minutes less time in the wash pans. This advantage was offset by the digesters in which no sulphur was used, being cooked at an average of 3.5-8 higher steam pressure, and .65 gallons more liquor used per digester.

The average color of the brown stock samples was No. 6.83 from cooks in which no sulphur was used and No. 6 from cooks in which sulphur was used, being almost equivalent to comparing a No. 7 with a No. 6 standard.

The samples of white stock from cooks in which no sulphur was used had an average bleached color of 72.03 per cent with a consumption of 12.2 pounds of

35 per cent bleach per 100 pounds of stock. Average stock bleached with 12.2 pounds of 35 per cent bleach per 100 pounds of stock will produce a 71.8 per cent bleached color, while the experimental run produced a .23 per cent better color.

The samples of white stock from cooks in which sulphur was used had an average bleached color of 74.7 per cent with a consumption of 11.74 pounds of 35 per cent bleach per 100 pounds of stock. Average stock bleached with 11.74 pounds of 35 per cent powder per 100 pounds of stock will produce a 69.06 per cent bleached color. Making the same allowance as above this amount of bleach should have produced a 69.29 per cent color if no sulphur had been used and since by use of sulphur we secured a 74.7 per cent bleached color, this would mean a difference of 5.41 per cent.

This saving of 5.41 per cent of 17 pounds or .92 pounds of bleach per 100 pounds of stock can be attributed to the use of sulphur in the digester liquor, since all of the other conditions were practically balanced.

Since it required the use of 1.1 pounds of sulphur per 100 pounds of stock to save .92 pounds of 35 per cent bleaching powder there would be very little advantage in its use under normal conditions if this were the only virtue to be considered.

However, it is claimed that an increased yield and increased strength is produced by its use in digester liquor, which will furnish material for future experiments in order to determine the extent of this increase.

WINTHROP MURRAY CRANE IS DEAD.

W. Murray Crane, former U. S. Senator and well known paper maker, died suddenly at his home in Dalton, Mass., last Saturday, after a serious illness of several weeks. The Crane family has made paper in Massachusetts since 1802.

EXPERIMENTAL SODA MILL COOKS.  
Using 1.1 Lbs of Sulphur per 100 Lbs. of Stock.

Cook Number	Gallons of Liquor Used	Be. Strength of Liquor	Causiticity of Liquor	Sulphidity	Per Cent Salt in Liquor	Average Steam Pressure, lbs.	Hours Shut in.	Hours at Full Pressure.	How Digester Discharged	Hours in Wash Pan.	Temperature of Stock When Bleach was Added.	Color of Brown Stock.	Pounds of 35% Bleach per 100 lbs. of Stock.	Temperature at End of Bleaching	Color of Bleached Stock.	Color of White Stock.	
1	43	114	93.4%	+ .9%	1	110	0	4 1/2	O. K.	7 hrs 10 min	83° F.	No. 7	13.1	116° F.	No Color	75%	
2	44	114	94.7%	+ .9%	1	110	0	4 1/2	O. K.	7 hrs 40 min.	86° F.	No. 8	15.7	131° F.	Light Blue	72%	
3	39	119	95.0%	+ .9%	1	110	0	4 1/2	O. K.	3 hrs. 25 min.	85° F.	No. 6	12.2	116° F.	Light Blue	80%	
4	43	114	93.1%	+ .9%	1	108	3	4 1/2	O. K.	3 hrs. 45 min.	82° F.	No. 6	12.2	128° F.	No Color	80%	
5	42	114	94.0%	+ .9%	1	109	3	4 1/2	O. K.	3 hrs. 35 min.	86° F.	No. 6	12.2	136° F.	No Color	80%	
6	43	113	93.2%	+ .9%	1	108	3	4 1/2	O. K.	3 hrs. 45 min.	85° F.	No. 6	14.0	133° F.	No Color	82%	
7	41	115	95.3%	+ .9%	1	102	3	4 1/2	O. K.	3 hrs. 15 min.	90° F.	No. 6	12.2	133° F.	No Color	75%	
8	42	114	93.3%	+ .9%	1	110	0	4 1/2	O. K.	3 hrs. 10 min.	83° F.	No. 6	12.2	130° F.	No Color	75%	
9	43	113	94.5%	+ .9%	1	109	3	4 1/2	O. K.	4 hr. 35 min.	85° F.	No. 6	13.1	135° F.	No Color	82%	
10	43	113	94.7%	+ .9%	1	108	3	4 1/2	O. K.	5 hrs. 10 min.	85° F.	No. 6	14.0	130° F.	No Color	80%	
11	42	114	94.5%	+ .9%	1	108	3	4 1/2	O. K.	7 hrs 0 min.	84° F.	No. 8	12.2	130° F.	No Color	62%	
12	42	114	93.6%	+ .9%	1	107	3	4 1/2	O. K.	3 hrs. 45 min.	88° F.	No. 6	12.2	130° F.	No Color	80%	
13	41	12	93.3%	+ .9%	1	110	0	4 1/2	O. K.	3 hrs. 25 min.	85° F.	No. 6	9.1	135° F.	No Color	70%	
14	42	114	94.4%	+ .9%	1	108	0	4 1/2	O. K.	3 hrs. 45 min.	85° F.	No. 6	9.1	133° F.	No Color	70%	
15	41	12	93.5%	+ .9%	1	108	0	4 1/2	O. K.	4 hrs. 45 min.	85° F.	No. 7	12.2	132° F.	No Color	65%	
16	41	12	93.5%	+ .9%	1	110	3 1/4	4 1/2	O. K.	3 hrs 0 min	86° F.	No. 6	12.2	122° F.	No Color	72%	
17	41	12	93.7%	+ .9%	1	107	3 1/4	4 1/2	O. K.	2 hrs 55 min	80° F.	No. 6	9.1	124° F.	Light Blue	60%	
18	41	11	94.5%	+ .9%	1	102	3 1/4	4 1/2	O. K.	2 hrs 35 min	86° F.	No. 6	10.3	124° F.	Light Blue	60%	
19	43	115	93.5%	+ .9%	1	107	3 1/4	4 1/2	O. K.	3 hrs. 20 min.	84° F.	No. 7	12.2	122° F.	No Color	62%	
20	43	115	94.5%	+ .9%	1	113	3 1/4	4 1/2	O. K.	4 hrs 0 min.	85° F.	No. 7	14.0	133° F.	No Color	72%	
21	44	114	94.5%	+ .9%	1	112	0	4 1/2	O. K.	2 hrs 50 min	82° F.	No. 5	9.5	125° F.	No Color	78%	
22	45	114	94.4%	+ .9%	1	112	0	4 1/2	O. K.	2 hrs 40 min	85° F.	No. 6	11.8	118° F.	No Color	70%	
23	42	114	94.4%	+ .9%	1	107	112	0	4 1/2	O. K.	4 hrs 35 min	83° F.	No. 6	10.1	120° F.	Light Blue	65%
24	43	114	93.1%	+ .9%	1	112	0	4 1/2	O. K.	3 hrs. 20 min	86° F.	No. 6	10.1	116° F.	No Color	65%	
25	43	115	93.7%	+ .9%	1	114	0	4 1/2	O. K.	2 min. 40 sec	91° F.	No. 5	9.5	126° F.	No Color	75%	
26	43	115	94.5%	+ .9%	1	113	0	4 1/2	O. K.	3 hrs. 35 min	84° F.	No. 5	10.1	131° F.	No Color	80%	
27	43	115	94.6%	+ .9%	1	113	0	4 1/2	O. K.	2 hrs. 35 min	87° F.	No. 5	12.5	134° F.	No Color	88%	
28	43	115	94.5%	+ .9%	1	114	0	4 1/2	O. K.	3 hrs. 5 min.	85° F.	No. 5	9.5	125° F.	Light Blue	76%	
29	41	12	93.7%	+ .9%	1	113	0	4 1/2	O. K.	3 hrs 5 min	82° F.	No. 6	12.9	123° F.	No Color	80%	
30	42	114	94.7%	+ .9%	1	113	0	4 1/2	O. K.	3 hrs. 25 min.	84° F.	No. 5	13.1	131° F.	No Color	80%	
31	44	114	95.1%	+ .9%	1	114	0	4 1/2	O. K.	4 hrs. 15 min.	83° F.	No. 5	9.5	122° F.	No Color	75%	
32	47	109	95.2%	+ .9%	1	111	0	4 1/2	O. K.	4 hrs 05 min	84° F.	No. 6	8.9	120° F.	No Color	68%	
33	46	109	95.0%	+ .9%	1	111	0	4 1/2	O. K.	4 hr. 20 min	88° F.	No. 7	12.9	116° F.	Light Blue	90%	
34	44	113	94.5%	+ .9%	1	112	0	4 1/2	O. K.	4 hrs. 70 min.	84° F.	No. 6	14.1	123° F.	No Color	90%	
35	44	113	94.8%	+ .9%	1	111	0	4 1/2	O. K.	3 hrs. 40 min.	86° F.	No. 4	13.1	124° F.	No Color	92%	
Average	12.75	113	94.14%	+ .9%	1.05	110	1.14	4 1/2	O. K.	3 hr 54 min	84.90° F.	No. 6	11.74 lbs.	126° F.		74.7%	

Table reproduced by photo-engraving from the Paper Trade Journal.

# The Allen Automatic Cooking Control for Chemical Pulp\*

By C. H. ALLEN, Glens Falls, N. Y.

Sulphite pulp should be cooked automatically for three principal reasons, as follows: (1) Production will be increased; (2) Quality will be improved; (3) The steam load on the boiler house will be more uniform.

In short, the automatic control which I will describe does for each charge of chips what a good cook tries to do, but can never do, because, in the first place, the apparatus he is using places a practical limit on his control, and secondly, he cannot be everywhere at once and think of everything at the same time.

The automatic cooking control system consists essentially of a power driven steam valve electrically connected to a steam flow meter on the digester steam line, an automatic relief valve, and relief strainers that do not plug. It also includes the automatic separation of relief gas and liquor.

The steam apparatus can be set to maintain any constant or varying steam flow curve. Temperatures within the digester are proportional to the rate of steam input. The control apparatus therefore can be set to give any desired temperature curve.

Cooking automatically does not necessarily mean that all charges of chips will be steamed on the same steam curve. In practice, where the strength of the acid and quality of chips are reasonably constant the same steam flow curve should be used on all digester charges; but in cases here the strength of acid and quality of chips vary widely from cook to cook better results may be obtained by varying the form of the steam curve to suit changing conditions.

These changes in the steam flow curve are very readily and quickly made. The steam curve element of the control system is a small thin plate of copper having an insulated hole; it is slipped over the chart spindle of the steam flow meter clock. The periphery of this piece of copper at any point represents the rate of steam it is desired to carry at that particular instant. The steam curve and paper chart of the instrument are rotated by the meter clock. It is no more trouble to change the steam curve than it is to change the paper chart of the instrument, in fact, the time required is a matter of only a few seconds.

Once the cook is started it needs no further attention until blowing time, and further, when a cook is started it is known beforehand when it is going to blow, within a few minutes. The reason for this is that it takes a certain and very definite quantity of steam to cook a cord of chips. Steam is metered into the digester at a predetermined rate and therefore it is known beforehand when the digester will blow. The cooking time may be shortened by steaming at predetermined higher rates and lengthened by steaming at predetermined lower rates. It has been proven that other conditions such as will occur from day to day do not affect the cooking time except to an almost negligible degree. When the digesters of any one mill are steamed automatically the proper spacing

out of the blowing time follows as a natural and inevitable result. If, as sometimes happens after blowing a digester a small amount of repairs are found necessary to the blow valve or piping, which delays the time of starting to cook the next charge of chips the cooking operation can nevertheless be finished on schedule time by adjusting the control apparatus to maintain a higher steaming rate.

The automatic relief valve can be set to maintain any pressure it is desired to carry within the digester. The relief valve stem is operated by a diaphragm which carries digester pressure on one side and is counteracted by a spring on the other. The diaphragm and spring are made large so that the resistance due to the sticking of the valve stem in its packing is practically negligible in comparison with the forces which tend to actuate the valve. When cooking by hand a good cook tries to open his relief valve by very small amounts at each adjustment and just enough to hold the digester pressure against his steam valve opening. If he happens to open too wide the strainer plugs. It is then necessary to shut off steam, blow back the strainers and start over again. The automatic valve cracks open by exceedingly small increments. It is always open to the correct amount and instantly responds to changes in pressure too small for a cook to detect even if he happened to be trying to do so.

The strainers used in connection with the control apparatus are of two different designs, one being adapted for use under the cover and the other in the digester neck. The cover strainer, so called, is somewhat similar in appearance to other strainers in general use. It consists of a bronze internal framework and an outside covering of thin perforated lead. The neck strainer, so-called, is made of perforated hard drawn lead. It is cylindrical in form and wide open at both ends. The outside diameter of this strainer is approximately one and one-half inches less than the internal diameter of the digester neck. In short the strainer is a perforated lead bushing fitting loosely in the digester neck. In operation the relief gas and liquor flow from within the strainer outwardly to the space between the bronze sleeve in the digester neck and the strainer, from thence through the digester neck and through a pipe of suitable size to the automatic relief valve. This is a stationary strainer, i. e., it is not removed when the digester is being refilled.

In the cooking of sulphite pulp many mill superintendents seek to have their cooks follow predetermined temperature curves. This practice represents an effort in the right direction and results in a somewhat greater uniformity of quality than is the case where steaming is left entirely in the hands of the attendant. Temperature recorders give only a rough indication of the steaming rate. It is easily possible to produce a very smooth temperature curve and a very erratic steam flow curve at the same time.

Temperature recorders are sluggish and slow to respond to the throttle valve. They do not indicate the rate of steam input at any instant. Changes in the quantity of steam pouring into the digester can

\* Read before the Technical Association of the Pulp and Paper Industry at the Fall Meeting in Saratoga Springs, N. Y., September 1, 1920.

be detected by means of the temperature recorder only after the lapse of considerable time.

Moreover, the temperatures at any two points within the digester are seldom the same. This fact is illus-

trated by the three sets of temperature records shown below. These are records of actual cooks. The dotted line in each case is the temperature in the side of the digester. The solid line is the temperature in the head.

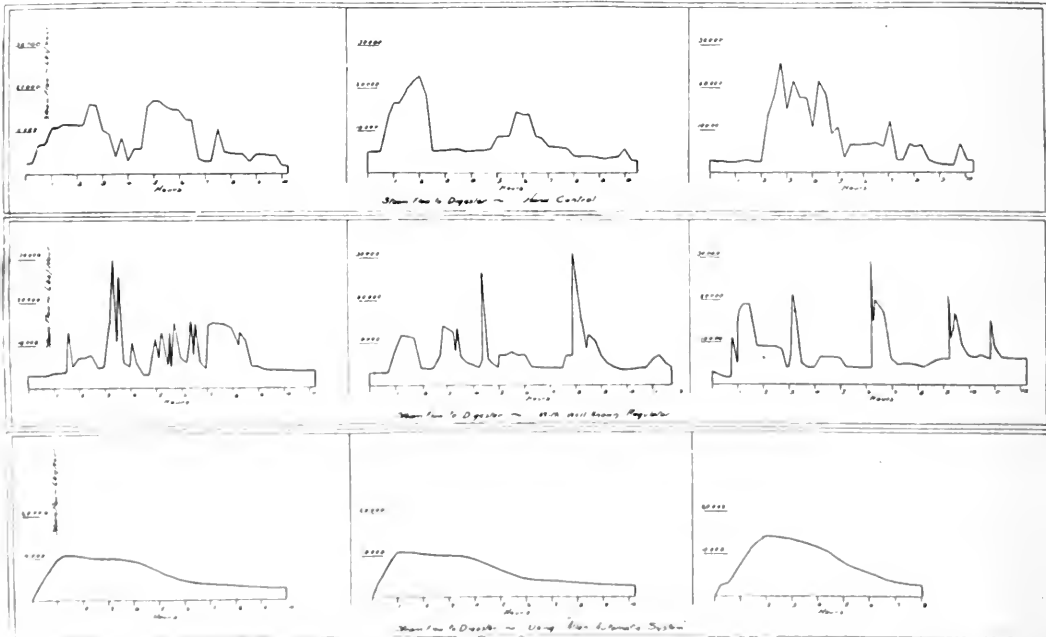
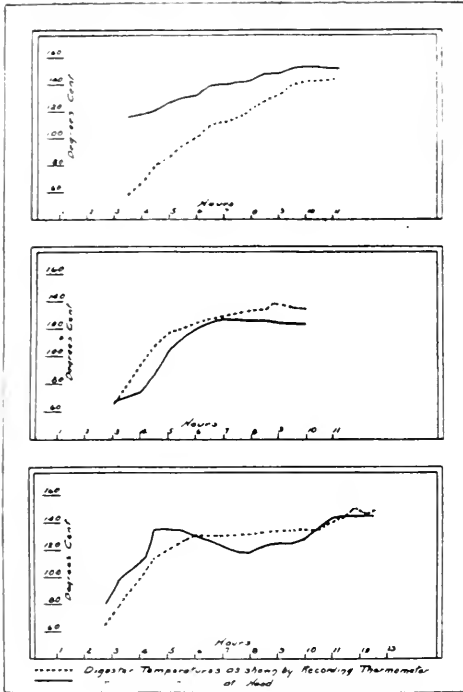
Violent changes in the steam rate of short duration cause scarcely a ripple in the temperature curve; however, spasmodic and violent changes in the rate of steaming do cause non-uniformity of product. Spasmodic and violent changes in the rate of steaming also affect the economy of steam plant operation disastrously.

A sulphite cook whose experience in cooking sulphite extends back over a period of seventeen years once said to me, "I never steam two digesters alike, and no two cooks steam digesters alike." This man spoke the truth, as the evidence of the temperature records indicates.

The first three curves are the steam flow meter records of three cooks steamed by hand. The next three curves are the actual steam flow meter records of three cooks steamed with a well known regulator; these are even worse than the records from hand control though, to be fair, it should be said that this regulator produces a very smooth pressure curve. However, the degree of smoothness of the pressure curve is no indication of quality, or the cooking time.

The last three curves are actual steam flow records taken from the same digester when steamed automatically. The first two curves were produced with the apparatus set for a ten and one-half hour cook, the last curve with the apparatus set for an eight and one-fourth hour cook. The quality of sulphite produced by these automatically maintained steaming rates was excellent.

In general, it may be stated that the form of the steam curve determines quality, and the average rate of steaming determines the length of the cook.



### ANOTHER RIORDON PARTY.

The Editor has the blues. A party of eighty pulp and paper men are up at Temiskaming, Ontario, visiting the new Kipawa plant of the Riordon Company, and the editor has to stay at home. It was not for lack of invitation, however.

Guests of the Riordon Sales Company from Canada, the United States, and even from England gathered at the Ritz Carlton Hotel, in Montreal, on Monday morning, and after getting fairly well acquainted with each other, sat down to luncheon. In the absence of Mr. Carl Riordon, Managing Director, who had to be at the mill, and Mr. T. J. Stevenson, who is now on his way home from England, Mr. Geo. E. Challes acted as master of ceremonies. With a brief and hearty welcome, and instructions for each man in the room to get acquainted with his neighbor, things began to move. Mr. P. T. Dodge, President of the International Paper Co., proposed a toast to the King, the Dominion, and the United States. Of the eighty odd guests who had hoped to be present only three were prevented from attending. At the close of the luncheon Mr. Challes introduced Mr. Frank Moore of Watertown, N.Y., who now has Canadian interests through his association with the Manouan Pulp & Paper Company. Mr. Moore, in a brief and witty speech, proposed a toast to the Riordon Company, and this was responded to by Mr. Challes, who mentioned with pride that five of the officers of the company had an average service record of more than thirty-two years. He and the company were heartily cheered. Mr. A. D. Huff, who was in charge of transportation arrangements for the party, then announced that the motors were ready to take the guests to the Place Viger Station where a special train of six cars stood waiting to take the guests to the mill. It was not explained why, but Mr. Beek was labelled "A-1." The train left promptly at 1:30, and that was the last the Editor saw of the happy people who were sure of a fine trip to the excellent plant at the foot of Lake Temiskaming. More will be heard next week of the trip.

### OUT OF EXPERIENCE.

The other evening I was speaking before a group of 300 factory boys—sixteen to eighteen years of age—who were attending a Y. M. C. A. night school. I was trying to drive home what it would mean to any one of them to lose an arm or an eye through an accident, what it would mean if the father of every boy in the audience should be killed, when I noticed one of the smallest boys crying. I stopped and asked what the trouble was.

Between sobs I got this answer: "Three weeks ago my dad was working on a scaffold in the . . . Plant when all of a sudden it gave way and he fell to the ground. Then they brought him home dead."

I asked the little fellow, barely sixteen years old: "And so you had to go to work because your father was killed?"

Again a sob and "Yes" was the answer.

It suddenly occurred to me to ask: "How many other boys here have to go to work because their fathers have been killed or seriously injured through an accident?"

Exactly ninety-nine boys raised their hands, not including the little fellow up in front who was now sobbing louder than ever.

I have been traveling back and forth across the country for years preaching safety and talking about the far reaching effects of accidents, but never had I pictured the loss of education to children, the suffering to mothers, the loss to society, as I did in the flash of ninety-nine boys' hands behind a hundred pairs of misty eyes.—From the Marathon Runner.

Who dares say it is not his business to look out for the other fellow? Where would **you** be if **your** dad had been killed, or had not been killed, because somebody was careless?

### DRESSING LETS BELTS RUN SLACK.

In almost every factory and machine shop a certain amount of power is wasted in transmission through driving belts, the percentage of loss depending upon the attention to the matter.

Slipping, the trouble most frequently encountered, is common to all classes of belting, and generally speaking the remedy applied is to cut and tighten or "take up" the belt, so that it will run free from slackness, with a better grip on the pulleys; but probably more belts are broken and prematurely destroyed in this way than by actual use, not to speak of the additional load thrown on the engine and the consequent waste of power.

To overcome slipping, many engineers incline to the principle of using belts wider than is actually necessary. This permits a heavier load to be carried, but when the practice is generally adopted all over a machine shop, 50 or more belts, the cost is considerable.

There is, however, a growing tendency to run belts slack, as not only is friction thus reduced and the life of the belt increased, but less power is wasted, and the strain on the prime mover is considerably reduced. Immediately the tension is reduced, the friction is proportionately lessened.

Further increase of the arc of contact around the pulley after the belt has been sufficiently slackened to have no initial tension will not lessen the friction, but the load-carrying capacity of the belt is increased. As an example, in many engineering shops it has been found that cuts 50 per cent heavier can be taken on lathes where the arc of contact has been increased from 180 degrees (with a tight belt), to as high as 220 degrees (with a slack belt), and in one instance with a corn-crushing machine the increase in output was over 50 per cent.

To permit driving belts to run slack, a proper belt dressing should be employed. Many belt dressings rely almost entirely on their capacity to "stick," due to inclusion of rosin or tar in their composition, but others take the form of a non-sticky preservative, or belt food, free from acid or alkali action, which is absorbed into the belt, rendering it pliable and highly effective and at the same time protecting it from the effects of moisture, dryness or chemical fumes. Such a preparation, properly applied, tends to give belts a velvety cling through the setting up of a vacuum suction without fear of slip, even under the heaviest loads.—The Amphibian.

## What T.A.P.P.I. did at Saratoga

### CONCLUSION OF COMMITTEE REPORTS.

#### Progress Report Regarding the Text Books.

Mr. Chairman and Members of the T. A. P. P. I.

Instead of merely stating what has happened since I last reported to you on the preparation of the text books it seemed appropriate at this time to make what might be called An Accomplishment Report. It is almost exactly two years since the Joint Committee was organized and somewhat less than that since the honor and labor of the editorship were urged upon me by the enthusiastic chairman of the Joint Committee. It was obvious from the first that we were undertaking an enormous task—and it isn't shrinking any.

You will pardon a bit of family history. Just before this matter engulfed me, I had planned a series of articles for the Pulp & Paper Magazine that covered almost exactly the ground we are now on and even most of the same chapter headings are found in the outline of the book. We had gone so far as to pick the authors for those articles, endeavouring to get the best men available. When I undertook the new duties the preliminary work was swung into line for the book practically as laid out for the magazine so we got a pretty good start.

The next thing was to keep it going and on the right track. The committee determined on the scope of the work, enlisted the assistance in a consulting and editorial way of men of international influence in the development and preparation of text books suitable for either the class room or home study.

The committee estimated, nearly two years ago, that \$30,000 would be required for the work. That has been entirely contributed by the industry—\$10,000 by the Canadian Pulp & Paper Association and \$20,295.27 by paper mills and others interested in the industry in the United States, a most successful co-operative effort.

The authors were selected, some only after much persuasion, others gladly and even gratuitously. The industry will rise some day and bless them all.

The committee thought best to furnish to the man who has had to leave school at early age, the opportunity to get the equivalent of the fundamentals of Mathematics and Science, so that he might comprehend and appreciate the principles and calculations involved in the machinery and processes for making pulp and paper. This material constitutes the first volume and includes Arithmetic, Mathematical Applications, How to Read Drawings, Elementary Physics, Mechanics and Hydraulics, Electricity and Chemistry.

An agreement was reached last December with the McGraw Hill Book Company for the publication of the text book and in January the manuscript for the first three sections was in their hands. At intervals since then other parts have been sent to New York, so that all of Volume I has now been despatched except for the chemistry and good progress is being made with that. The author's draft has been checked by the editor and is being re-written where necessary to make it perfectly clear to a mind not trained to think logically. This procedure has been followed in all cases and the editor has frequently consulted with engineers in special lines. Our principal aim is to have it right.

From the publishers' standpoint and for logical development it has been necessary to concentrate our efforts on Volume I. The publishers agreed to go ahead with the work as we gave them the manuscript for complete sections as units. They maintain that press work cannot be started until they have all the manuscript and can do it all in one job. They will print 1000 sets of sections for binding in volume form and 1000 in pamphlet form for class room use.

The quality of paper has been approved by the committee, but it may be another matter to deliver the goods. However, the industry will doubtless clothe its own child.

Authors of other sections may wonder why someone doesn't either wake up the editor or write his obituary. Perhaps they are enlightened by what has just been said. It may be that the editor feels a bit that way about some of the authors, but we all, editor and committee realize that the authors are frequently working under great difficulty and stress. One man suffered rheumatic fever for months, but kept pegging away at his work. Much manuscript has been prepared, ably and conscientiously. Some of it has not yet been read by the editor, but the pile is growing steadily smaller.

When the editor has gone through the authors' manuscript, he sends it in succession to several friends who know that particular phase of work and are easily imposed upon and asks them to make suggestions and add information. Sometimes they do. For instance two men who read the biggest manuscript in the book made the same suggestion—that four or five experts sit down at a table and read the whole work together. An ideal way, but can we do it? Perhaps we can with some parts. Probably others can be handled by correspondence. What do you think about it?

Of Volume 2 we have the manuscript for Logging Operations, two on Properties of Wood, the section on Soda Pulp, Treatment of Pulp, Bleaching of Pulp and the Analysis of Pulp and Paper Making Materials.

For Volume 3, we have manuscript for Treatment of Rag and other Fibres (except old papers), Beating, Coloring, Engine Sizing, The Paper Machine; practically all of its volume.

For Volume 4, we have Tub Sizing, Finishing Operations, Paper, Coating, part of the section on Pumps, and a contribution on Paper Mill Lubrication.

The committee feels that a lot of work has been accomplished, and it hasn't all been plain sailing. Much remains to be done and will be done as rapidly as accuracy permits. If we had not fixed on the highest possible as the only thing permissible, you would have some books in your hands now. You want to know when you will have the books. We can't tell you. The printer can't be sure of his paper, his coal or his labor. The editor, unfortunately cannot give all his time to this work. But progress is being made and you will be satisfied with the books when you get them. Just read this over when you get home and see what has been done in 19 months since the associations approved the plan and voted the money.

Respectfully submitted,

J. N. STEPHENSON,

Editor.

The most valuable "system" is a good nervous system.—Forbes Magazine.

# The Prodigal Sons Entertained

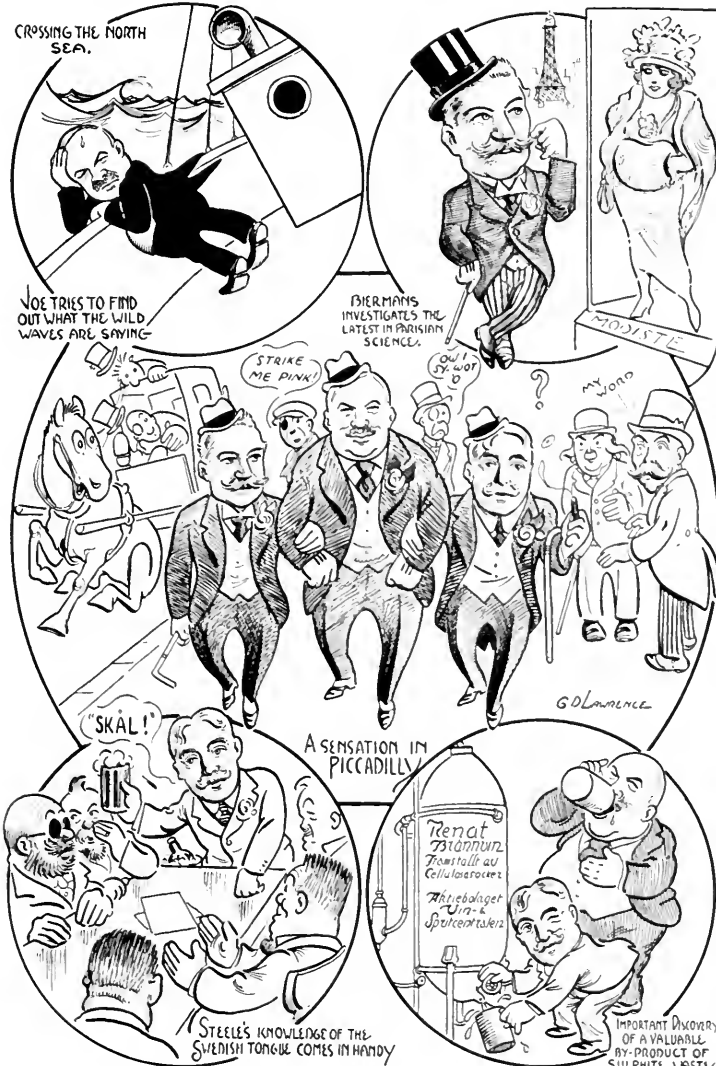
The safe return from Europe of Messrs. H. Biermans, J. A. Bothwell, and Geo. F. Steele was commemorated by the Executive of the Canadian Pulp & Paper Association with a dinner at the Ritz Carlton Hotel in Montreal last Thursday night. About thirty-five guests enjoyed the occasion, which was presided over by Mr. George Chahoon Jr., president of the Canadian Pulp & Paper Association. The fact that Mr. Chahoon was in the chair was sufficient to insure the success of the gathering. The guests each replied

when the opportunity was given them by Mr. Chahoon to express themselves with regard to conditions and experiences on the other side.

Mr. Bothwell was particularly impressed with the forestry methods in Scandinavia and dwelt at some length on the advanced practice of those countries. A suggestion made in the course of his remarks was that the Association send a representative to study all the phases of this important subject and report thereon, the idea being to awaken in the minds of the public as well as among industries dependent upon the forest a greater interest in forestry and the conservation of this natural resource. Mr. Bothwell mentioned particularly the fine feeling that exists in Scandinavia for Canadians.

This was repeatedly shown in the great cordiality with which the visitors were received and the hospitality accorded them. It was the same in Sweden, Norway and Finland and their willingness to co-operate with a Canadian representative and give him every assistance in studying their conditions and methods was strongly presented to the gathering. The Executive the next day considered the matter and a report is expected in time for our next issue.

One of the hits of the dinner was the cartoon which was enclosed with the menu. Through the courtesy of the Association and the Montreal Gazette, we are privileged to reproduce it.



## IS YOUR LIFE INSURED ?

The following extract from the remarks by Sir Edmund Walker before the Life Underwriters is of general interest :

"Economy properly understood is a fine art, and is as rare as most of the fine arts. Of the various co-operative efforts of man to aid industry, and, therefore, to avoid waste, the honestly managed life insurance company is the finest example. It helps to mitigate the greatest trouble, death; it teaches people to apprehend and provide for other dangers; it multiplies their savings by its investments; it renders its beneficial provisions possible by spreading the cost of the individual disaster over the many who co-operate. It even improves the general health of a man by its study of his life medically and by the wise conditions it imposes.

### BRITISH EMPIRE TIMBER EXHIBIT

The Empire Timber Exhibition which was held in July, at the Holland Park Skating Rink was arranged by the Department of Overseas Trade with the object of bringing into general use the numerous timbers of the Empire. There are altogether over 600 different varieties on view. These have come from British Guiana, British Honduras, British North Borneo, Canada, Ceylon, the East African Protectorates, Fiji, Gold Coast, India, Newfoundland, New South Wales, New Zealand, Nigeria, South Africa, Tasmania, Trinidad and Western Australia as well as from the British Isles.

Mr. Kellaway, Comptroller-General of the Department of Overseas Trade, presided at a luncheon on the opening day. He said it was the first occasion had been brought together in one building. The colon which timber grown in various parts of the Empire lectured proved that it was unnecessary in order to obtain the timber required for any civilized work to go outside the Empire. The only drawbacks were lack of transport and accessibility, and these could be got over when once it was realized what resources the Empire possessed.

Lord Selborne spoke of the need of inquiry into the forestry resources of the Empire, and also emphasized the necessity of reforestation.

In the afternoon Col. Courthope, M.P., chairman of the advisory committee of the exhibition, in asking Prince Arthur of Connaught to open the exhibition, said that many of the timbers shown were so little known that they had no names except the local vernacular or in botanical Latin.

Prince Arthur of Connaught, in opening the exhibition, said that the world's consumption of timber was enormous, and every one of the Dominions required a far-sighted policy of forest conservation.

#### The Canadian Exhibit

The exhibit of Canadian timber is eminently practical. It appeals to the building trade rather than to cabinetmakers. It is an education in Canadian forestry to examine the various samples of wood shown. Mr. W. B. Stokes, of the Forest Products Laboratories of Canada, McGill University, was in charge of the exhibit, and the whole design of it and of the ingenious methods of showing the quantity and quality of the forest products are his work. In conversation with a representative of the Canadian Gazette Mr. Stokes said that the first thing to be noticed in the Canadian exhibit was that every bit of timber on the stand was Canadian, even the pillars, cornices and railings. All was in natural wood, unpainted and unpulished. The exhibit included commercial timber four boards of each, rough and smooth, clear and merchantable. In contrast with the dark woods shown on neighbouring stands by tropical countries Canadian woods were chiefly light colored. The Canadian woods were largely put to structural uses and were therefore of interest to the building industry. "The centre of the display," continued Mr. Stokes, "is occupied by a pulpwood exhibit which illustrates the three processes of manufacture of pulp—ground wood, sulphite and kraft. You will notice, too, that graphical statistics of the timber cut in Canada in 1918 are shown by pieces of the actual species cut to scale. Thus the smallest product is oak, of which 212 million feet were cut, and the largest is spruce, of which 1,112 million feet were cut in 1918. There are 22 different kinds of woods tabulated, and the amount

cut of each, comparatively and actually, can be seen at a glance. There is also a set of hand specimens of 69 species of Canadian woods beautifully framed in cherry wood. The samples of panels of bird's-eye and fiddle-back maple are worth looking at.

The three large squares of flooring in the centre of the stand are of birch, beech and maple. The doors in the back-ground are of Douglas fir made in Vancouver. We have also some wire-wound water-pipes of Douglas fir which are used in irrigation works. Another exhibit of interest is a model of a roof truss made of Douglas fir to illustrate the use of this wood, which is stronger for its weight and stiffer than other structural timbers. Everything shown has either been made in the Forest Products Laboratories or outside to our design. In the catalogue you will see that Canadian products are most carefully listed, and Canada seems to be the only country that has supplied, in the case of all woods exhibited, statistics as to strength, hardness, &c."

#### Private Canadian Exhibits

Several firms had exhibits of Canadian timber products. Among them was an attractive display by the Canada Overseas Trading Company (Eldon Street, E.C.) at stand 22. Mr. Clarke, president of the company, explained that everything on the stand was Canadian. Among the exhibits were cedar shingles for roofing, which, when coated with a waterproofing would last for forty years and more; ready-made doors of various designs, made of yellow and white pine, some un moulded, some moulded in the solid wood, and others with loose mouldings; all kinds of mouldings which could be supplied in any design, made of Douglas fir; laths for plastering; door frames, window sashes, bannisters, flooring, fence pickets, railway ties, water pipes wire bound and covered with preservative; and dowels. This stand seemed to form a useful supplement to the Government stand in that one saw the various woods in their manufactured state.

Mr. G. E. W. Crowe, agent for the British Canadian Export Company, Limited (83 Pall Mall) showed some of the Canadian-made kitchen cabinets, dressers and refrigerators which attracted much attention when shown at the Canadian Industries Exhibition. In the making of these labor-saving kitchen appliances all the wood used is Canadian birch, elm and oak.

Other firms showing Canadian timber or products were the Bennett Furnishing Company (47, Glengall Road, S.E.) at stand 52; Drew Clerk & Co. (Diamond Patent Ladder Works, Leyton, E.10) at stand 51; James Latham, Limited (124, Curtain Road, E.C.2), stand 3; and Wm. Mallinson & Son, Limited (130-8, Hackney Road), stand 71.

#### HOW PAPER IS PARCHMENTIZED.

Vegetable parchment parchmentized as follows:

The unsized paper is immersed in 75 to 84 per cent. sulphuric acid, followed immediately by washing and drying. The sheet is dried under tension. The treatment with sulphuric acid forms a semi-transparent gelatinous layer on the surface, making the paper tough, and resembling real parchment. All traces of the acid must be removed from the paper after treatment. A mechanical method of producing a similar result consists in beating sulphite pulp into a slimy gelatinous mass and forming this exceedingly slow stuff into a sheet. "Eagle A" Unity.



## British Trade News

(From our London Correspondent)

London, September 22, 1920.

As an instance of the interest manifested in new pulp and paper propositions, one has only to look at the success of the Anglo-Newfoundland Development Coy's offer of £500,000 8 per cent guaranteed 15-year second mortgage debentures. Inside of 100 minutes the full amount was covered. By closing time—i.e. within 6½ hours—8,004 applications were received, making the total £4,470,170. Thousands of forms were received by post too late and are being returned. They represent a further total of about £2,500,000. This figure does not include personal applications turned away at the bank, after the list had been closed. There is now a special staff engaged on the preliminary work leading to allotment and this is being pushed forward with all possible speed. The success of this appeal to the public is very encouraging to those seeking capital in England for new pulp mill or paper mill extensions or propositions, so long as something tangible can be shown in the way of security. In this particular case the Anglo-Newfoundland Coy., went about the issue in a methodical and business-like way; then assembled all their forces, showed their security and profits, and backed these up with pictures in the "Mirror" and "Daily Mail". As a result millions of pounds rolled in.

### Edward Lloyd's Capital.

Proposals for the reorganization of Edward Lloyd's capital, as foreshadowed at the meeting held in July last, are now before the shareholders, and will be submitted for approval at a meeting to be convened shortly. As the capital stands at present, there are £677,500 5½ per cent preference shares and £600,000 ordinary shares, both of £1 each. The company has employed in its business, in the form of reserves and undivided profits, a sum of over £680,000, the bulk of which, of course, could have been utilized for ordinary dividend had it not been thought advisable to pursue a conservative policy. In order that the ordinary shares may more truly represent the actual capital employed in the business, it is proposed to capitalise £600,000 of the reserves and undivided profits, and to distribute them in the form of new shares, thus giving the ordinary a share-for-share scrip bonus.

### A Compliment for Canada.

Colonel Courthope, M.P., who has just retired from the Presidency of the Royal English Arboricultural Society, when addressing the summer conference last week said, he deplored the public ignorance of forestry and wished they could do something like the Canadian Forestry Society, which had aroused extraordinary public interest in forestry.

### Technical Conference.

The Technical Section of the British Papermakers' Association will hold a conference in Manchester early in October and an interesting program is being arranged for the occasion. Papers will be read on such subjects as "Technical Education in Paper-making"; "The Testing of Wood Pulps"; "Machine Strainers"; "The Economic Utilization of Heat and Power in Paper Mills"; and "Some Notes on Paper Testing". One whole day will be given to reading and discussing the papers. The papermakers are now following the same lines adopted in Canada; they are becoming alive to the importance of technical discussions on subjects of importance to their own common inter-

est. A new era is certainly opening in the British industry and one hopes the Technical Section will receive all the encouragement and support it well deserves.

### Imports of Mill Boards.

Canada occupies a prominent position in supplying millboards to the British market. The trade is an important one and worthy of much study. During August last the imports of millboards into English and Irish ports were as follows, in tons:

Canada, 1,554 Finland, 911; U. S. A., 805; Sweden, 580; Germany, 247½; Norway, 161½; Netherlands, 8½. In leatherboards, Finland, U.S.A., and Scandinavia monopolise the trade with England, but imports are on a small scale.

### Strawboard Imports.

In the supplies of strawboards the Netherlands have always topped the list of importations, only a small share falling to Canada, which is regrettable, when one considers the amount of raw material at the Dominion's disposal. For the information of Canadians, the following figures relating to the imports for August last into the British market will be found interesting: Netherlands, 8,218 tons; Finland, 773; Canada, 149; Belgium, 52; Germany, 6½; Sweden, 2.

The supplies from America are small, being under one ton for August last. It will be noticed that Germany is now in the market with boards in small quantities.

### Carboard and Pasteboard.

The countries supplying carboard and pasteboard to English buyers, include Canada, the following figures for August last showing the Dominion's position: Sweden, 942 tons; Canada, 226; U. S. A., 1483; Finland, 57; Germany, 43; France, 2½.

Small shipments are received also from the Netherlands, Italy and Denmark.

### Canada's Outlook.

On this side of the Atlantic it is very remarkable the interest that is manifested in Canadian pulp and paper since the war ended. Even more so is the keen watchfulness of the progress of new extensions in the Dominion. For some months past all eyes have been directed on Canada and the newspapers here are constantly referring to the output of the pulp and paper mills. Canadians would do well to encourage this interest that is being taken in their concerns and not lose sight of the fact that the British market is an extensive one with a demand for all kinds of paper and boards, as well as pulps. The colonies, also, are not to be overlooked. Never in our history have so many visions being made to Canada to survey the conditions governing pulp and paper as they have been during the past 18 months and never have so many applications been made on this side, as there are at present, to represent English houses in Canada for fine qualities of paper. There is, undoubtedly, a considerable interchange of trade going on and mill owners in the Dominion should not under estimate it, but encourage it no matter how small. Canadian pulps have already got a good hold on the market in England, thanks to the indefatigable efforts of some of the leading agents, and it only requires the paper mill men to take a leaf out of the pulp men's book and try and establish themselves with the success their conferees have achieved good pulp and good newsprint always sell.

### Papermakers' New Offices.

The British Papermakers' Association now occupies new offices at 26-27 Farringdon St., London, E.C.

Want of space, and other encumbrances compelled the Association to seek a new abode and Mr. Foster, the Secretary, and his staff are now busy "licking" their new premises into shape. The position is more central in the City and right in the heart of printer-down. Canadian visiting London should make a note of the change of address.

#### Northern Printers' Strike Over.

Fortunately the strike on the Manchester and Liverpool newspapers is now at an end; but the fact must not be overlooked that sellers of newsprint have suffered their quota. Even a large daily paper like the "Manchester Guardian" had to stop publication for three weeks and the suppliers of newsprint to this journal alone have had tons of paper thrown on their hands, by the stoppage. The dispute has certainly caused serious losses to paper agents and papermakers. We are congratulating ourselves that the strike did not spread to London. But we are not out of the wood yet. Strike fever is still rampant in London and in a short time the composing and typographical societies, along with other auxiliaries, will present demands for wages to the London newspapers which may land us in the same position as the Manchester and Liverpool people.

#### The Pulp Market.

The market for all pulps is quiet. We are at present passing through the dull season and the holiday period, and it will be fully another two or three weeks before any movement can be anticipated. There is also an uncertain and divided feeling prevailing over the crisis raised by the coal miners. Mill owners are preparing to close down if the worst comes, as without coal no pulps are wanted. Stocks today at all mills are ample for present requirements. There is also a desire to hold back from buying in order to see what change will take place in the market when winter buying starts. Sellers are very firm and hold out no hope to buyers—indeed, they are expecting all future business to the end of the year will be on a very firm basis. No interest is being taken in sulphate and the same remark applies to groundwood. Sweden is selling strong sulphite at \$10.50 per 100 lbs. c. i. f. American port, to U. S. A. buyers on spot dealings. Norway reports little movement. Japan is selling surplus pulps as a result of their recent big deals in Scandinavia. Taking the market all round there is a hesitancy in buying, inquiries are on a limited scale, spot deals are on a small scale, and quotations are very firm. If the industrial troubles are amicably settled, another few weeks may completely change the market.

#### Sir Wm. Mather Dead.

Sir William Mather, of the famous engineering firm of Mather and Platt, Manchester, has died. His concern plays a prominent part in constructing paper-mill machinery and nine years ago, Sir William undertook the sole management of the business. He was a great educationist and was one of the leading figures connected with the Manchester School of Technology.

Mr. A. N. Russell, who for past eight years has been Mechanical Engineer for the Ticonderoga Pulp & Paper Co., of Ticonderoga, N. Y., has been appointed Sales Engineer for the Dominion Engineering Works, Limited, of Montreal. Previous to his mill experience in the U. S. A., Mr. Russell was engaged for a number of years in the designing and building of paper-making machinery with British and American firms of machine builders.

#### MOULD GROWTHS ON WOOD PULP.

Editor Pulp and Paper Magazine,

Concerning the article of mine on "Mould Growths on Wood Pulp", which was reprinted in the Pulp and Paper Magazine for September 23rd, I would like to make a few observations. It is generally admitted that "rot" has caused large losses in wood pulp and in pulp wood, particularly in recent years, and quite a number of investigations have been made into the subject. It appears to me that to solve this problem of the why and wherefore of decay, it must be attacked in the widest possible manner. For instance—what kind of pulpwood is most likely to be infected with *cladosporium* fungus? Does not the increasing use of inferior pulp woods such as jack pine, red pine, hemlock, balsam all point to the possible fact that one or more of these woods is responsible for the decay? Possibly one type only.

On the other hand the fungus may infect all the recognized pulp woods with equal facility, and the prevalence or otherwise of fungus may be due to climatic conditions only. I believe there is reason for thinking that both the above ideas have some solid grounding.

As to the climatic idea, the following may be of interest—about 1898-9 considerable "rot" appeared in the wood pulp received at Lloyd's newsprint mills in England and the well known paper chemist R. W. Sindall started an investigation, but had to drop it at that time. In 1900, I took his place at the mills and from then until 1907 little or no rotten wood pulp was noticed, that is for a period of seven years or more. From 1907-1910 both Scandinavian and Nova Scotian wood pulp shipments came in frequently highly contaminated with fungoid growth or which developed rapidly after a while in the stack. It was obviously unlikely that both countries 3,000 miles apart, would have changed their use of some particular species of wood at the same time. It therefore appeared that certain climatic conditions in the Northern Hemisphere during the years 1898-9 and again in 1907-10 had been favorable to the growth of fungus in pulp wood trees. Otherwise, how can the comparative, or total absence of fungus during a space of seven years be explained?

I would suggest that someone carry out the following work—Grind sound wood from all the species of pulp wood trees at present in use, bale the moist (50 per cent) pulps and stack, under favorable conditions for fungoid growth. Do the same with known infected woods. Doubtless if properly carried out, this would yield very valuable results.

If it can be proved that no special kind of pulp wood leads to decay, the ground will be cleared for further investigation. If, on the other hand, proof is obtained that, say, Jack pine and that only is the cause of decay, this would be most valuable information and the remedy in pulp mill operations would be obvious, even if somewhat costly.

Of course, some of the above suggested work may have been already carried out, but it appears doubtful.

The question whether the decay is due to periodical climatic conditions, either local or world-wide, it seems to me should be definitely settled first, by the getting together of all possible information from Canadian, American and European sources.

F. B.



# UNITED STATES NOTES

The Cost Association of the Paper Industry at its fifth annual convention, held last week at the Astor Gallery of the Waldorf-Astoria Hotel, New York, brought together no fewer than 150 cost accounting experts and others identified with this branch of the paper industry. It proved to be one of the most successful gatherings of its kind ever held. Among the papers read and in the course of the talks given by experts on some of the leading systems, the whole problem of cost accounting was gone over in a most comprehensive and enlightening way, including particularly the relationship of the cost department to the executive, to the mill hand and to the fixing of the selling price. Seth L. Bush, of the Chemical Paper Manufacturing Co., Holyoke, Mass., was elected President of the Association to succeed D. E. Burchell, of the Eastern Manufacturing Co., Benzer, Me. B. E. Hutchinson of the American Writing Paper Company was chosen Vice-President and J. M. Allen continues as Secretary-Treasurer for the ensuing year.

Plans for the erection of a large addition to its plant at Danbury, Conn., are being worked out by officials of the Beaver Brook Paper Mills. The company has booked at the present time orders sufficient to keep its present mill going at full capacity for at least six months. In order to take care of the increasing volume of its business, the Beaver Brook Company proposes to enlarge its plant to about five times the present capacity.

The American Writing Paper Company, last week, entertained as visitors at its office and factories, at Holyoke, Mass., J. and J. M. Benker, of the firm of Van Gelder Sons, Amsterdam, Holland, who are in America on a six weeks tour to study the paper industry of the United States and Canada. After leaving Holyoke, they went to the mills of the Strathmore Paper Company at Mittineague.

The Dextre Products Company, Inc., of Buffalo, N. Y., has appointed the Washington Paper Company, 55-57 Great Jones street, New York, sole selling agent of its products in the New York territory. Principal among the products of the Dextre people are the "Prepared Dry Gums" which help to increase production and decrease cost in the paper box and book binding industries.

The "Philadelphia Press", one of the oldest papers in Philadelphia has been consolidated with the "Public Ledger." All the real estate and the entire plant equipment of the "Press" was acquired recently through purchase by the Public Ledger Company. Cyrus H. K. Curtis, president. Publication of the "Press" ceased last Saturday. In New York, Frank A. Munsey, owner of the consolidated "Sun" and "New York Herald", reverted to the name "New York Herald" as the title for his morning issue, and continues the name, "The Sun", as the title for his evening paper, heretofore known as the "Evening Sun."

As a result of the determined conservation of paper now being practised, waste paper that used to be tossed into the streets and alleys is now being hoarded

and disposed of through the industry. Discovery of the practical utility to which waste paper can be put has gone for toward solving the problem of its disposal in the larger cities. The paper stock concerns in this field are now paying considerably more for all kinds of old paper, bags of all descriptions, rags and cotton and wool waste. One of the leaders in this line in New York and Boston, the Main Paper Stock Company, has grown to such an extent within recent months that it has had to enlarge its main office and factory in New York so that it now occupies all the territory at 25, 27, 29 and 31 Peek slip. One of the specialties of the company is the production of manila envelopes, which have become exceedingly popular among New York business firms.

The more general use of the fibre board box in the shipment freight is looked upon by the Forestry Bureau of the Department of Agriculture as an important factor in forest conservation, since only about one-sixth of its material is new wood pulp. In a recent report of the bureau are cited a number of points in favor of its use for this purpose. Among other things it is claimed that the fibre box aids better utilization of freight car space, so necessary at this time. The average fibre box weights from two to five pounds, a considerable reduction of shipping weight when compared with the same size wooden boxes. It is shipped flat when empty and in this form occupies about one-tenth of the space it will contain when set up. It is much used for preventing breakage of fragile articles. The manufacture of these boxes is a comparatively new industry, dating from about 1905. There are now 190 factories in the United States making corrugated and solid fibre boxes with a total annual production valued over \$75,000,000.

Twenty mills in New England states and Northern New York, visited in the course of a recent business trip, are reported by Louis I. Elson, president and general manager of the Washington Paper Company, as being more or less behind in the completion of their orders due to delays they are encountering in the receipt of raw stock. Representative of these mills, according to Mr. Elson, are expecting that there will be no let up in this shortage of ray material before next Spring.

The Webster Mill of the International Paper Co., at Orono, Me., is to have more power. Two new concrete and penstocks are being built and others improvements to the plant will be made.

## A. P. W. CO. LOOKING FOR TIMBER IN LABRADOR.

The St. John's Newfoundland Telegram says that a number of Americans have been looking over some timber areas in the vicinity of Pinware River, Labrador, on behalf of the A. P. W. Paper Co., Albany, New York. The party spent two and a half weeks cruising at Pinware. They report dense growth of very fine pulp timber in that locality. The A. P. W. Paper Co. have had to depend upon other paper mills for their raw material. They now propose erecting mills of their own of 16 machines. Western Star



## Technical Section



### REVIEW OF RECENT LITERATURE.

**C-5. Fighting low pile fires.** F. J. Hoxie, Paper, 26, 636-9, 1920. See also Pulp & Paper, 18, 105-11, 1920. Prevention is the most important factor in considering fire control. Methods of extinguishing are second and the separation of the wood into small parcels is the third. Dry pulpwood can rise effectively be protected by hose streams when the wood is piled in low well separated stacks. When wet wood can be used the entire pile can be kept wet, gaining greater uniformity, reducing rotting and preventing fire. With the introduction of automatic sprinklers fire possibilities are lessened, but there are few mills at the present time which have a sufficient water supply to successfully extinguish a widespread fire. The stacking and conveying apparatus in use at pulp mills can be made useful at a slight cost for fire protection, facilitating the continued wetting of the piles in dry weather, as well as allowing access to a fire on the top on such a pile.—A. P.-C.

**E-2. Soluble tanning extracts from sulfite pulp waste liquors.** Fr. patent No. 496,496, H. Landmark, Norway, Aug. 5, 1919. *Chimie & Industrie*, 3, 356, (March 1920). Tanning extracts which are difficultly soluble in cold water are rendered easily soluble by the addition of sulfite extract, which acts as a peptiser for the insoluble phlobaphenes. The sulfite extract is obtained from sulfite waste liquor by freeing it of lime and Fe and concentrating to 25° B.—A. P.-C.

**E-2. Sulphite spirit manufacture.** A discussion of the design of the digester fittings and the quantity of waste liquor. A. D. Kuhn, *Woch. F. Papierfab.*; Paper, 26, 628, 1920. The ratio of liquor to wood depends upon the method of digestion, species and moisture-content of the wood, so that the quantity of waste liquor may show variations between 5 and 10 c.m. per ton of pulp. Digestion proceeds most favorably when the proportion of free to total S is about 70 or 80 to 100. The digestion must be stopped when the concentration of sugar in the liquor has reached a max., because the sugar which has been formed then undergoes a gradual decomposition. The use of a concentrated liquor effects an economy of S and steam and a higher efficiency in the digester with uniform results in the product. In order to obtain the max. quantity of waste liquor, the digester must be blown under pressure. It is also advantageous to introduce hot water on to the pulp under pressure, because in this way the water displaces the spent liquor, whereas the introduction of water without pressure merely results in the dilution of the spent liquor. The spent liquor coming from the digester under high pressure should be connected to a pressure relief vat, where a powerful evaporation at 80° takes place, and this gas may be recovered.—A. P.-C.

**K 6. The rational treatment of esparto.** E. Arnould, Paper, 23, 99-101, May 1920. See also Pulp & Paper, 18, 48 Jan. 15, 1920. The faults found with esparto pulp made by the so-called English process are: low yield, 12-14% of the cellulose is lost; short soft fiber lacking strength, excessive formation of lumps on the machine, it bleaches to a dull yellowish white and requires 12% of bleach; it causes fuzzing of

the sheet at the couch roll; its cost is high. These are due to excessive cooking, the soft upper portion of the stalk getting the same treatment as the hard foot. This may be overcome by a thorough grinding and washing before cooking, thereby decreasing the required strength of the liquor 60-70% and increasing the yield from 38-40% up to 50%. The same liquor can then be used over again to treat a second portion of grass, yielding 65% of a very satisfactory second grade pulp.—A. P.-C.

**K-7. Improved discharge valve for beaters.** World's Paper Trade Rev.; *Papeterie*, 42, 447-8, (May 25, 1920). The valve seat, in the bottom of the beater, is cone-shaped and is provided with a rim at the bottom. The valve is built up of superposed plates, with a ring of rubber, or other elastic material, having a wedge-shaped section, which easily fits into the seat. When the rubber ring is pressed against the seat by the plates it makes a tight joint. The valve is operated by means of a threaded stem and hand wheel.—A. P.-C.

**K-9. Fine paper loaded with tale.** *Papier-Zeitung*; *Papeterie*, 42, 408, (May 10, 1920). A sample of paper was found to be composed of 25% bleached beech pulp, 25% bleached birch pulp, 20% bleached balsam pulp, 20% fine white trimmings, 10% tale. It resembles paper made from cotton rags, and is equally suitable for writing and printing. The stock was warmed to 40° C when beaten, and it was colored and sized according to the Ebbinghaus process.—A. P.-C.

**K-12. Functions of the smoothing press.** Paper, 26, 633, (1920). The smoothing press is not used to press more water out of the sheet, but to make a uniform pressure per in. of width of the machine by smooth rolls which are run on the paper and without any felt. Such operation taking place immediately before the paper enters the dryers, and while the paper is in a damp and softened condition, will enable wire-marks and felt-marks to be removed much more readily than after the paper becomes dry.—A. P.-C.

**K-18. Coarse pulp for fiber board.** Fr. patent No. 499,226, Société dite Cellulose et Papiers.—Société de Recherches et d'Applications, France, Dec. 8, 1917. *Papeterie*, 42, 403-4, (May 10, 1920). The raw material is subjected to a mild cooking treatment, followed by crushing; or the crushing may be both preceded and followed by cooking. A. P.-C.

**K-19. The origin of coated paper.** *Journ. des Imp. Suisses*; *Papeterie*, 42, 408-9, (May 10, 1920). Coated paper is probably as old as papermaking, and its manufacture travelled West in the same manner as the manufacture of other papers. It was first made in the U. S., about 50 years ago.—A. P.-C.

**K-23. Machine for reinforcing paper with threads.** Fr. patent No. 501,904, Ernest Cotta, France, Feb. 7, 1920. *Papeterie*, 42, 141, (May 25, 1920); *Papier*, 23, 102-3, (May 1920).—A. P.-C.

**K 23. Machine for making reinforced paper.** Fr. Patent No. 497,936, Chas. Henry Howard, U.S.A., Dec. 11, 1917. *Papeterie*, 42, 401, (May 10, 1920).—A. P.-C.

**K-23, R-5. Papermaking in India.** World's Paper Trade Rev.; *Papeterie*, 42, 110, (May 10, 1920). A description of the manufacture of hand made paper in Hyderabad, India.—A. P.-C.

**K.O. Durability and conservation of paper.** Aribert et Bouvier, *Papeterie*, **42**, 338-52, (Apr. 25, 1920), 386-92, (May 10, 1920). The durability of paper depends on: (1) the nature of the stock used, (2) The treatments to which it is subjected during its transformation into paper, (3) traces of chemicals remaining in the paper, (4) conditions under which the finished paper is kept. (1) Paper manufactured from cotton rag stock with all the necessary precautions can last for centuries. Properly prepared rag stock consists of "normal" cellulose, which is one of the stablest organic compounds, occurring in nature. Chemical pulp, i.e., the cellulose obtained by delignification of vegetable tissues, is much less resistant to the action of oxidising and hydrolyzing agents than is normal cellulose. Paper made from chemical pulp will not be as durable as that from rag stock; but when properly prepared it may constitute up to 25% of the furnish and yield a very durable paper. Mechanical pulp consists of impure ligno-cellulose; it yellows very easily, becomes brittle and possesses very little strength. It should never be used in the manufacture of durable paper. (2) The cooking of the raw materials should be just sufficient to dissolve out the impurities and incrusting matter; for both insufficient and excessive cooking yield a pulp requiring a very energetic bleaching treatment, which is very detrimental to its durability. The cooking must be followed by a very thorough washing to eliminate all the soluble products formed during cooking, as they might form colored compounds, with Cl, which would be very difficult to eliminate. Proper bleaching consists in oxidising all substances other than cellulose, without attacking the latter. The usual causes of the addition of an excessive amount of bleach are insufficient cooking, excessive cooking, incomplete washing after cooking, use of rule of thumb methods of bleaching. The addition of acid (usually  $H_2SO_4$ ) and heating of the stock to hasten bleaching frequently result in impairing the quality of the stock.  $KMnO_4$  is superior to Cl as a bleaching agent, for even a large excess does not attack the cellulose, providing the bleaching is carried out in the cold. Beating, as it was carried out in the early days of papermaking, yielded a much more durable product than do modern methods. Properly purified loading materials are not detrimental to the quality of paper, if they are not added in excessive amounts. But in practice some of them, notably kaolin and  $BaSO_4$ , sometimes contain traces of acids. Though animal size and starches are readily attacked by most microorganisms, papers many centuries old sized with both these classes of material have been found in perfect condition, showing that with proper care size does not impair the durability of paper. For rosin sizing, the use of hard water causes the precipitation of Ca and Mg resins, which are very hygroscopic and may be hydrolyzed by the  $H_2O$  they absorb. It is also important to avoid acidity in the alum. In gelatine sizing, formaldehyde ( $CH_2O$ ) should be used to prevent bacterial action, and glycerine or spirits of turpentine to prevent the gelatine film from cracking. It has not yet been proved that aniline dyes injure the durability of paper; but there is the possibility of their undergoing a slight decomposition during drying, yielding harmful products. It is suggested that certain dyestuffs may be capable of condensing light of certain wave-lengths, which would profoundly affect the constitution of the cellulose. For machine-made paper, if the drying temperature is too high, or

if it is not properly graded, the product will be brittle and weaker, and the formation of harmful products will be greatly favored. (3) The most frequent and most harmful chemicals remaining in the paper are free acids and free Cl. The latter acts only after having been transformed into  $HCl$  (or  $HOCl$ ). As antichlorers merely transform Cl (or  $HOCl$ ) into  $HCl$ , they are useless, and the only safe way is to wash the stock free of Cl and acids. The action of free acids in transforming cellulose into pulverulent hydrocellulose is discussed at some length. (4) The durability of finished paper is affected by light, temperature and humidity, and the surrounding atmosphere. The yellowing of mechanical woodpulp is due to the oxidation of fats, waxes, resins, lignin, etc., brought about by the action of light of short wave-length (blue, violet, ultra-violet). Yellowing of paper made entirely of chemical pulp may be due either to an excessive cooking treatment to which the pulp was subjected, or to traces of free acid and free Cl, resin, Fe resins, etc., the destructive action of which is much more harmful than the mere yellowing. It is suggested that light may have a catalytic effect in breaking down cellulose or some of the impurities present in the paper. The paper should be kept at a proper and even temperature, and under such conditions that it will retain sufficient, but not too much, moisture. Excessive moisture may result in the formation of  $H_2SO_4$  from  $SO_2$  or  $H_2S$  present in the air, and it greatly favors the development of molds and fungi. Their growth may be hindered or prevented by the use of  $ClO_2$ . The atmosphere of large cities contains appreciable amounts of compounds such as  $H_2S$ ,  $SO_2$ , etc., and also numerous germs, which are harmful to paper. Klemm's test for Fe resinate and Hughes' reaction for detecting free acidity due to alum are described, and a brief note on sizing with cumarone is appended. A. P. C.

#### N. Y. WORLD BUYS CANADIAN MILL.

The New York World has bought the property of the St. George Pulp and Paper Company located at St. George, Charlotte county, New Brunswick.

This purchase comprises the groundwood pulp mill at St. George, the daily output of which is thirty tons of freehold land and about 120 square miles of licensed lands, the estimated stand of pulp wood being approximately one million cords.

Some time ago the New York World bought the St. George mill of the same company located at Norwalk Ct., the groundwood pulp for which has been coming from the New Brunswick mill.

It is estimated that the annual growth on these lands will provide the raw material for a 100 ton pulp mill, all of which means that the future growth of the New York World is protected up to at least seventy-five tons a day of news print paper by the enlargement of the St. George Pulp Mill, together with an additional paper machine at Norwalk, Ct.

The New York World is also in a position to add another paper machine to its De Grasse mill whenever its requirements call for it.

The three mills which the New York World now owns and operates have a weekly capacity of 1,325 tons of news print paper.

If the St. Louis Post-Dispatch should decide to take its supply from these mills the expansion above referred to can be made to take care of this paper as well as the New York end

# PULP AND PAPER NEWS

A luncheon was tendered E. Roy Sales by the people of Port Elgin prior to the departure of himself and family to take up their residence in Toronto where Mr. Sales is now the manager of the Canadian Weekly Newspaper Association. An address and a handsome club bag were presented to Mr. Sales and out glass to Mrs. Sales. Most of the municipal officials took part in the gathering.

Because their premises were broken into and a quantity of newsprint seized on January 12, the Fort Francis Pulp and Paper Company, Limited, have had set for trial an action for \$20,000 against W. A. Baker, J. L. McNichol and R. A. Pringle, former Newsprint Controller for Canada.

A novel newspaper, a copy of the "strike edition" of the Liverpool Echo and Express, has been received in Toronto. Owing to the strike of compositors, Liverpool and Manchester were without their regular daily papers for some time. The Liverpool Echo partially met the problem in the same manner as the Literary Digest, when the U. S. printers were on strike. The edition consists of one page only, but thanks to the excellent system of condensation prevailing in Britain, a tremendous amount of news is given, in tabloid form, none of the day's events, apparently being overlooked. The paper was produced by means of the typewriter, the engraver and the ordinary printing press, typesetting thus being eliminated.

A number of the pulp and paper workers from the Niagara district mills will attend the annual convention of the International Pulp and Sulphite Workers Union to be held in Ottawa for five days starting October 5th. Ottawa is the first Canadian city to have the honor of entertaining the delegates of the union which was formed some years ago.

The program for the annual convention of the Canadian Paper Trade Association to be held at the King Edward Hotel in Toronto on October 6 and 7 has been issued and indicates good work by the executive committee in preparing a full two day's of addresses, discussions and entertainment. The various routine reports will be read at the morning session of the first day and this will be supplemented by an address by Mr. W. C. Ridgway, General Secretary of the National Paper Trade Association of the United States on "the outlook for the paper industry in the United States," while delegates will also report on trade conditions in their various sections. There will also be a reading of a composite statement as to protection to jobbers by manufacturers. The visiting delegates will be guests of the Toronto members at a luncheon at noon and there will be a dinner in the evening. Among the other features of the two day's proceedings will be a paper by Mr. Edward Beck of the Canadian Pulp and Paper Association on forestry conservation, an address by Mr. A. E. Day, secretary of this association, and

a tour of the Toronto harbor improvements. A large attendance is looked for at the gathering.

Mr. Nelson Gain, of the Don Valley Paper Co., Ltd., is receiving the congratulations of his many friends in the paper trade in Toronto and elsewhere on the arrival of a lusty young paper maker at his home.

Mr. E. B. Archibald, of the Harland Engineering Company, Montreal, called on the paper trade in Toronto this week.

Mr. and Mrs. de Shryber, of Auckland, New Zealand, where Mr. de Shryber is a prominent paper dealer, spent several days in Toronto during the week calling on members of the paper trade.

A break in the shaft of the machine at the Provincial Paper Mills Company's plant at Thorold this week caused a shut down of the mill for several days.

Mr. A. B. Stovell, of the Stovell Lithographing Company, Winnipeg, was in Toronto this week. Another Winnipeg visitor was Mr. Percy Kellett, of the Bulmer lithographing firm.

Before his departure to take up his new duties as managing editor of the Ladies Home Journal, Mr. T. B. Costain of Toronto, was tendered a dinner at the Ontario Club when he was presented with a handsome cabinet of silver.

A charter has been granted the Kratz and Hall Lumber Co., Limited, with headquarters in Vineland, Lincoln County, to carry on the business of timber merchants, pulpmill owners, etc. Among the incorporators are John H. Kratz, Louth Township and Joseph Hall of Waterloo. The new organization is to take over as a going concern the business and assets of the business now carried on at Craighurst, Simcoe County, by J. H. Kratz and Co. A charter has also been granted the Pembroke Timber, Tie and Pulp Co., Ltd., Pembroke, with a capital stock of \$40,000. Among the incorporators are James S. Fraser, L. M. Chapman, A. J. Miller and F. J. Shepherd.

Mr. John Mather, manager of sales of the Whalen Pulp and Paper Mills, Ltd., is in Montreal. He reports business was as steady in B. C. with his firm making 200 tons of sulphite pulp—and selling it.

D. G. Calvert of Strathroy, Ont., has been appointed resident engineer of the Fort William Pulp and Paper Co. He will have charge of the construction and equipment of the plant on the Mission site. Mr. Calvert is a graduate of the University of Toronto and served three years as assistant engineer for the Transcontinental Railway, with headquarters at Cochrane. He then joined the Canadian Stewart Co. on the Toronto Harbor improvement work as office engineer, and was later associated with the Mead and Talbot interests.

Mr. T. J. Stevenson, of the Riordon Company, is expected home this week, after four months in England and Europe.

A step in the direction of enlisting the listed section of the Toronto Stock Exchange came this week in the listing of the common and preferred stocks of the Abitibi Power and Paper Co. which were called for the first time on Tuesday.

There is general regret in the paper and pulp industry that Mr. A. L. Dawe, secretary of the Canadian Pulp and Paper Association is confined at home with tonsillitis. His friends hope for a quick recovery.

Mr. L. P. Andrews, president of the British Wood Pulp Association, and Mrs. Andrews are in Canada on a short visit. They expect to return home in about a week, but Mr. Andrews declares he is coming back.

The Ottawa river, which has been at its lowest level since 1916, rose three inches Friday night and this came as welcome news to mill owners, who have been seriously handicapped by lack of water.

#### Kenora Gets New Backus Mill.

The agreement between the Ontario Government and E. W. Backus, the American pulp and paper manufacturer, under which a new pulp and paper industry is to be established at Kenora, has been signed. It contains the following undertakings:—

Mr. Backus (the Keewatin Lumber Company and the Keewatin Power Company), is confirmed in his possession of the Lake of the Woods limit, but agrees to pay the present dues on pulpwood, a substantial increase over those fixed in the original agreement:

He agrees to proceed at once with the construction of a fifty-ton capacity pulp mill at Kenora and to resume operations at the Kenora saw mill, formerly owned by the Rat Portage Lumber Company:

He secures for his companies a lease of the water power at the White Dog Rapids, subject to full Government control:

He secures an undertaking by the Government to place the English River limit in the market at public competition and agrees to tender upon it:

He also accepts a condition that any part of his output must be sold to Canadian publishers if the Government directs.

#### SPANISH RIVER IS NOW ON SEVEN PER CENT BASIS.

Spanish River common stock was placed on a 7 per cent basis at the annual meeting of the Spanish River Pulp and Paper Mills, Limited, held at the head office of the company in Toronto on September 30. About ninety per cent of the total outstanding preference and common shares were represented at the meeting. The former directors were all re-elected and at a meeting of the board the following officers were elected: President, George H. Mead; vice-presidents, P. B. Wilson and Lieut.-Col. T. Gibson; secretary J. G. Gibson and treasurer A. H. Chitty. At the close of the general meeting the following statement was handed out:

"The directors wish to announce further that after careful consideration it is felt that the company is warranted in placing the common as well as the preferred stock upon a cash dividend basis, and at the meeting, held today, formal declaration was made of the first quarterly dividend on the outstanding common stock of 1¾ per cent per annum, payable October 15th to stockholders of record September 30."

Discussing the outlook for the paper trade President George H. Mead, of Dayton, Ohio, said: "From all present indications the paper business is in a strong condition. While there have been recessions in production and price in other commodities, we have seen no indication of the falling off in consumption of newsprint paper. There is quite a good deal of production contemplated during the next two or three years, but it is proceeding slowly, and at the present rate will not catch up with consumption in the immediate future; in fact, so far, the development in the industry is behind the normal increase in consumption. Of course, it is impossible to tell what to-morrow may bring forth, as the world is in an upset condition, but the paper industry as a whole looks to be sounder than almost any other line of trade.

"It is becoming more evident each year that the supply of newsprint paper for this continent must be furnished by Canada, and that with the development in the foreign countries that have large resources temporarily at a standstill the opportunity is at present open to the Canadian industry very largely to control the markets of the world. The question of conservation of timber supply and reproduction is most vital, and should be given greater and greater consideration each year."



A. G. CAMPION.

Well known factor in the pulp and paper industry who died suddenly in Montreal last week at the age of 55. Mr. Campion came to Canada from Sittingbourne, England, where he was associated with Edward Lloyd, Limited.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Oct. 2.—A fresh opportunity for the expansion of the paper trade into an avenue hitherto very little explored, developed this week when it became known that thousands of dollars worth of fruit was rotting in the Niagara district and other parts of Ontario through lack of baskets to transport it from the orchards to the cars. Paper baskets have been made but not used to any great extent and according to a practical paper maker in Toronto there is no reason why there should be any shortage of baskets while paper or box is available. It is claimed that a good trade could be opened up in this line if paper manufacturers or specialty manufacturers from paper products could find the time to divert some of their energies into this channel. It would appear, however, that the present state of the trade, with its enormous demands upon the production of the ordinary lines of paper, precludes the possibility of taking on any specialty lines, although such a line as paper baskets at the present time would be a god-send to the fruit farmers. As a result of the basket shortage the Toronto papers are advocating a daily collection of empty baskets after the manner of waste paper collection and it is estimated that some 25,000 baskets at five cents each could be gathered in for fruit farmers. The fact that during the milk price investigation a milk dealer said that he had a loss of thousands of dollars yearly through the breakage of bottles, has also suggested the possibility of the general use of paper bottles which, with the lacteal fluid, could be left at the door on a cold winter's morning and not be cracked by the frost. While the need for such receptacles is generally acknowledged it would appear as if the paper and board industry was not in a position to enlarge the scope of its activities in this direction at the present time, but those on the outside of the paper business are wondering why this breach has not been filled by the paper manufacturers.

### *Newsprint and Pulp.*

Although there is said to be a falling off in the pulp market there are no very direct evidences of it. One firm sold groundwood pulp this week for \$150 and better, while a paper mill in Ontario is known to have secured a shipment at \$100 according to the invoice which was seen by a salesman who passed the information on to the Pulp and Paper Magazine. The truth seems to be that there is neither a falling off nor an advance in the pulp market. It would appear as if very little pulp is being traded in but what is changing hands covers an average range for ground wood of \$130 to \$160 according to the Toronto salesman of one of the big pulp and paper companies, while unbleached pulp is ruling at from \$175 to \$200. No bleached pulp is being offered for sale as far as can be learned but it was stated in Toronto this week that a certain pulp mill had been offered an order for 2,000 tons of bleached

touch the order on account of being tied to capacity with their contracts.

As far as the newsprint situation goes a slightly easier condition is discernible in the United States spot market but it has not materially affected the Canadian newsprint trade. Newsprint is still very hard to get and practically no deliveries are being made outside of contracts. From 5c to 6½c for rolls and 7½c to 14c for sheet news are about the ruling figures but very few, if any, spot transactions are being made. Some see symptoms of a slight hesitation in the newsprint buying market and while the future is admittedly uncertain it is pretty freely predicted that the first quarter of the new year will see news up again two or three cents a pound. Predictions such as this, however, are made with reserve and it is generally conceded that no one knows just how the market will go in the next few months.

### *Book Papers Tighter Still.*

The trade reports that bonds and flat papers are coming through a little more freely but book papers are tighter than ever. Supplies of book paper are very hard to get and there are many complaints from jobbers and printers as to the quality of paper the mills are sending out. It is recognized, of course, that the mills are up against the raw stock proposition and that whereas a few years ago they could turn out a fairly good paper using groundwood pulp at \$20 or \$30 a ton, now they are hard put to it to get groundwood at around \$140 a ton and have to use sulphite at the present high price. The scarcity of raw material is having a serious effect on the quality of the paper being turned out and the mills seem powerless to remedy the matter. One jobber declared that the book paper he has been receiving from the mills of late is not fit to send out and yet he passes it to the printer who in only one or two cases has sent it back to the warehouse as unfit for his use. In this way many big contract jobs are being held up, for, if the customer insists on the original stock for the job as per sample submitted the printer has simply to tell him that he will have to wait until the mill turns it out which may be in the more or less distant future. Contracts too that have been based on a 9½c paper which has been long delayed in delivery and is now 20c have been revised by the customers, the printer laying down the dictum that the price he is to get for the job is governed by what he has to pay for paper today and not what he quoted when estimating the job some time ago.

The general opinion seems to be that in paper lines generally a point very near to the peak in prices has been reached, although a decline in sympathy with other lines that have been on the down grade lately is not looked for immediately. In this connection it is pointed out that many lines of merchandise, perhaps bought at high prices, are now due for a drop if they have not already come down.





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paper trade circles it is believed, too, that it is going to make the merchants use more advertising space than ever. One jobber declared it as his belief that next Christmas would bring a bigger rush for paper than had hitherto been experienced. The mills are still away behind with their book paper orders and in some cases this week orders placed almost a year ago are only now beginning to come in.

#### *Wrapping Paper.*

A new regulation affecting the wrapping paper trade from the mill to the jobbers went into force this week when the trade was notified that all free freight delivery points, outside of mill points, in Ontario had been cut off. Toronto, Ottawa and Merriington are the chief Ontario exceptions. The wrapping paper trade continues to enjoy big business but the jobbers complain of being unable to get sufficient stock for the requirements of their customers. There have been no changes in prices during the week.

#### *Tissues up Slightly.*

As indicating the firmness of the market for tissues, the present week saw a slight advance in light weight kraft papers and manila tissues. There is a big demand for these classes of papers and the mills and jobbers have more business than they can handle.

#### NEW YORK MARKETS.

New York, October 6.—(Special Correspondence).—The demand for paper of practically all kinds has developed a decidedly quieter tone. Contrasted with the situation existing not so long ago, the market now presents a notable contrast. Consumers in all directions are operating as buyers in very limited fashion, and where a short time back, demand was of an urgent character and there were buyers for two pounds of paper for every one pound produced, today manufacturers and jobbers alike are complaining of the difficulty in obtaining new orders. The entire turn of affairs is believed to be due to the wave of conservatism sweeping the country. The slashing of prices on various commodities has brought buying very nearly to a standstill, buyers evidently being of the belief that by holding off for a time they will be enabled to purchase at cheaper prices later on. For quite a spell this situation has been developing, and the paper trade managed to ward off similar conditions up to a few days ago. Now, however, consumers of paper are exhibiting the same reluctance to buy as are users of numerous other commodities. Then, too, the dullness prevailing in virtually all lines of merchandising naturally makes for a light

consumption of paper, which in turn permits consumers to refrain from placing orders.

Prices thus far have been little affected. There have been cases cited where paper has been sold at recessions from commonly recognized market levels, but this is more of an exception than the rule, and mills have not resorted to general price cutting. On the contrary, quotations on most grades of paper are well maintained and even in some instances there is still an upward tendency apparent. In certain kinds of paper, notably high-grade bonds and writings and in tissues and box boards, reports tell of easiness of a degree bordering on a break in values. Yet there has been no actual decline in prices to amount to anything. Manufacturers take the view that the lowering of prices at this time would avail them nothing in the way of creating more business, because buyers are in that frame of mind where they are going to buy only if immediately in need of supplies and not otherwise, regardless of the quotations named. The general uncertainty existing throughout the business world, tight money conditions, the upheaval of the United States foreign trade by the dropping off of exports and the market increase in imports, together with various other depressing factors have placed the consumer and business man in a position where he is determined to pursue a waiting policy, to refrain from buying for a time. So that, generally speaking, it can be stated that the paper market is in a much quieter condition than it has been in upwards of a year, but that prices on the whole have undergone very little material change.

Printing papers constitute the firmest end of the market. This applies to both newsprint and book papers. Mills making these grades are so well booked ahead with orders that they can afford partially to ignore the market situation at the moment. Few cancellations of orders are being received by manufacturers of such papers. Publishers who have orders on file are letting them remain; moreover, indications are that if additional tonnages of news or book paper were available they would easily find buyers. Prices are at previous levels, with book papers evincing a tendency to advance. Fine writing papers are easy, and while mills have sufficient business in hand to keep them running full, it is understood that they have had many cancellations and that they are apprehensive over the future. Tissue papers are in unusually limited demand and the market presents anything but a strong undertone. Wrappings are in less demand than for a lengthy period, while reports have been heard of some board mills re-

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That the market will improve its position over that now prevailing is the opinion expressed on all sides. Manufacturers and dealers alike look for matters to spruce up within a short time when conditions become better stabilized and when commercial activity in general gets back to a more normal scale. Everyone seems confident that there will be no appreciable drop in paper prices during the balance of this year. What may happen after that time is a question concerning which few are willing to hazard a guess, but it is generally accepted that mills have enough business booked up to keep them busily occupied for the next three months and to maintain prices at about current levels.

**GROUND WOOD.**—There is a rather limited demand for mechanical wood pulp at present and the market reflects this by displaying a more or less soft undertone. Prices have not changed this week, and business has been done at levels indicating that values are being maintained, but on the other hand there have been reports of transactions in some cases at figures under accepted market levels. Prime quality spruce ground wood has been sold at \$125 and \$130 per ton at grinding mills, and foreign ground wood has brought the same prices, yet it is stated authoritatively that purchases have been effected in out of the way instances down to \$115 a ton. The main factor in the ruling situation is that consumers have let up in their buying, which, in conjunction with the arrival of fairly large tonnages of ground wood from European sources, makes for an easier market condition. Everyone in the trade is of the belief that ground wood prices will become stronger during the next several months, or when cold weather hampers producers, at which time grinders will fail to have the surplus stocks to draw on that they usually have in the early winter.

**CHEMICAL PULP.**—Although chemical wood pulp prices have undergone no sharp declines, there is no gainsaying that they are easier in tone and that most kinds of pulp can be bought at recessions from the quotational levels recently prevailing. This applies especially to foreign pulps. There have been offerings of imported unbleached sulphite of strictly No. 1 quality here this week at 9.75 cents a pound ex dock, and sulphite of this description of secondary quality is reported available down to 9 cents. Foreign bleached sulphite is obtainable in larger quantities than in a long time and is quoted at between 13 and 14 cents per pound ex dock Atlantic ports. Foreign easy bleaching sulphite is also quotably lower at

around 10.50 cents, while Scandinavian kraft is offered at 7.25 cents on the docks. Indications are that Swedish manufacturers are endeavoring to sell all the pulp they can find buyers for in America at the prices they want, and in frequent instances they are lowering quotations to put through deals. Domestic pulps hold fairly steady in spite of a narrower demand from consumers. Papermakers are buying only when immediately in need of supplies, and, evidently realizing that offered lots are on the increase, are doing a good deal of shopping around the market in search of low-priced holdings.

Receipts of foreign pulp at New York this week included 4,415 bales from Gothenburg, 2,352 bales from Christiania, 1,618 bales from Kobe, and 2,175 bales from Rotterdam.

**RAGS.**—Few paper manufacturers are actively in the market as buyers of rags and there is consequently little trading current. New cuttings of most kinds are holding their own in price, due not so much to the amount sold as to their relative scarcity resulting from the light production of new rags recently, but old rags are easy and can be brought in most quarters at recessions from the prices lately quoted. Roofing rags of No. 2 quality have been sold down to as low as 2.10 cents a pound at shipping points and felt-makers are securing all the supply wanted at 2.25 cents. Old whites are a little off in price at around 14 cents for No. 1 repacked, and old thirds and blues of repacked quality are available at 4.50 cents. New shirt cuttings are firm at a basis of about 26 cents for No. 1 packing, and washables, new muslins, white lawns and new silasias rule quotably steady.

**PAPER STOCK.**—The retirement of most box board manufacturers as buyers has resulted in quite a severe break in prices on low grades of old paper. Folded newspapers have sold at 2.25 cents a pound at shipping points, or \$10 per ton under recent prices, while No. 1 mixed papers are freely obtainable now at less than 2 cents a pound, against a previous basis of around 2.15 cents. High grades hold steady, shavings in particular. Soft white shavings of No. 1 quality can scarcely be bought under 8.50 cents a pound at shipping points, and packers demand 9.50 cents and more for No. 1 hard white shavings. Old book stock is bringing around 3.15 cents at shippers' points and No. 1 overissne newspapers 2.60 cents.

Imports of miscellaneous paper stock at New York this week included 961 bales from Belfast, 121 bales from Dundee, 278 bales from Manchester, 40 bales from London, and 25 bales from Glasgow.

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## TABLE OF CONTENTS

### Editorial :

Regarding immigration . . . . .	1059
Woodlands Section for A. P. and P. A. . . . .	1060

### Special Articles :

Convention of the Canadian Paper Trade Association . . . . .	1061
Paper trade on firm basis . . . . .	1063
The protection of jobbers . . . . .	1065
Utilization of sulphite waste liquors. . . . .	1067
A test of recovery furnace living . . . . .	1071
Report of U. S. Tariff Commission on Canadian Reciprocity . . . . .	1075

### Miscellaneous Information :

Growing one tree, cutting four . . . . .	1066
Follow the rainbow to the gold . . . . .	1066
The kingdom of woodpulp . . . . .	1069
Lockwood's Directory for 1921 . . . . .	1072
Five stages of paper making (cartoon) . . . . .	1072
Book Review—Modern Pulp and Paper Making . . . . .	1073
Protecting coal . . . . .	1076

Chemical Engineering Catalog ready. . . . .	1079
On shipping acids . . . . .	1079
Do we care ? . . . . .	1082

### News of the Industry :

Propose Ontario Government paper mill . . . . .	1066
Exports of paper wood pulp and pulp-wood . . . . .	1070
New president Whalen Pulp and Paper Counted by hand . . . . .	1073
Beek to go to Sweden . . . . .	1074
Price Bros. & Co. reorganizing . . . . .	1074
Kipawa plant growing rapidly . . . . .	1076
Pulp and paper Unions met in Ottawa. . . . .	1077
Could get more for pulp than finished paper . . . . .	1077
Pulp and paper news . . . . .	1078
International plans another huge mill . . . . .	1079

### The Markets :

Chemicals at New York, Oct. 6th . . . . .	1079
Canadian paper trade conditions . . . . .	1080
New York markets . . . . .	1082

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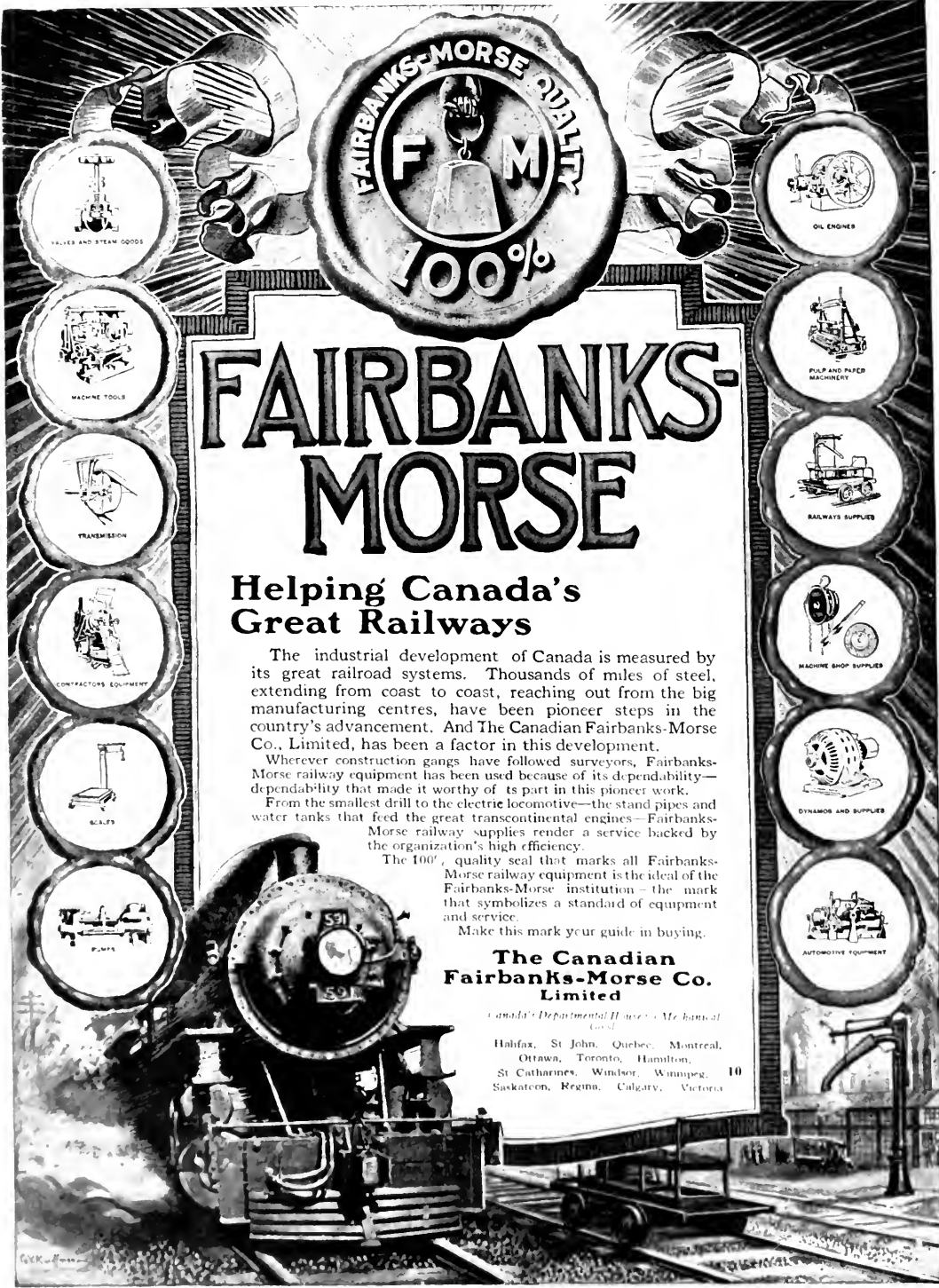
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# EDITORIAL

## REGARDING IMMIGRATION.

The tendency is to make access to Canada and the United States more difficult. This is particularly true with regard to the would-be immigrant, who has not been able to afford even the scanty opportunities for education that many other countries provide. The result is that many able-bodied honest workmen are barred from our shores. At the same time the increase in educational opportunities and requirements within our borders is creating a condition where there is a much greater proportion of labor available for the higher classes of work and a serious lack of labor willing and able to undertake the rougher tasks. While the growth and building up of our cities and the construction of our public works require much labor of a character not demanding very much education or even intelligence, such labor is practically non-existent among those who have previously come to our shores.

The question of immigration is by no means simply in providing unskilled labor. It is the more serious problem as to whether the new-comer will be a desirable citizen. Experience has pretty well shown that even a college diploma may not be a badge of safety, as regards citizenship. An examination of the ideals of the individual and an estimate of character would be to our mind a better basis for measuring the reliability of an immigrant than a literacy test. The ability to read and write simple phrases in the immigrant's language does not seem to be a measure of his ability to earn a living in this country. He may be proficient to a degree, in a language which is seldom or never seen in printed form. Y.M.C.A. and other workers among foreigners have shown that it is not a difficult matter, nor a long process, to acquaint such students with the common terms and expressions that are most important to them. It would seem to us far better to provide opportunities for such study and require attendance at such classes by the illiterate immigrant than to admit foreigners who know no English at all on the basis of having a smattering of their own language, and letting them continue in their ignorance of the language of their adopted country. Such instruction in simple English, and we would advocate that all foreigners be required to attend classes therein, should be the best opportunity for showing him the opportunities that await honest workers in this wonderful country, and impress upon him his obligations of residence and citizenship. As his proficiency with the language increases, the

new-comer can be further acquainted with fundamental principles of economics, which would both discourage his exploitation by capital, and the tendency for him often to follow the misleading and unfounded statements and non-Canadian doctrines of those whose business it is to stir up unrest.

To our mind the problem of the immigrant is not whether we let him in but what we do with him when we get him here. The selection of the immigrant is fundamental, and must have first attention and careful consideration. But the responsibility of our government, which means ourselves, is by no means dispatchful when the examination is passed. The government employment bureau and colonisation agency should first see that the new-comer is guided in the right direction and placed according to his financial and mental qualifications, and that a dominion wide immigrant educational program should provide them at least the fundamental instruction in English and citizenship. We feel that such a movement is absolutely necessary. The critical nature of the problem was brought out forcibly in an address recently delivered before the Kiwanis Club of Montreal. The speaker told of the difficulties facing many immigrants both regarding themselves and their children. The Province of Quebec provides by law only for the education of Roman Catholics and Protestant. There is no *real common* school. Consequently, many foreigners have found themselves without educational opportunities. The lack of this is perhaps more unfortunate with regard to the children because they do much of the teaching to their parents.

So long as the British North America Act stands it is probable that we shall not have a national school system. The federal government probably will continue to have no authority in educational matters. However, this should not hinder the greatest possible co-operation between federal departments, such as the Ministry of Labor and the Ministry of Immigration from working hand in hand with the educational authorities of the provinces in this matter of educating the immigrant. At present it seems that only philanthropic and semi-philanthropic organizations such as the Frontier College and the Y.M.C.A. are really doing anything along this line. There is no co-ordinate, Dominion-wide effort, as far as we can discover, to provide the foreigner, whether newly landed, or an old resident, with an opportunity to learn the English language, and to become acquainted with Canadian customs and ideals.

Although, as, stated, there is little likelihood of a national school system, there is a chance for the federal government to assist in the organization and maintenance of schools for immigrants throughout the Dominion. Although the non-English speaking foreigner enters largely through our Atlantic and Pacific Ports, he frequently finds his way to the interior, so that his education concerns every province. Every centre where a class could be formed, should have a school of some kind for teaching English to the foreigners. By federal co-operation uniformity of procedure and standards could be obtained, and the country would be far better off for the greater intelligence of these residents. We believe that the effort along this line would not only be an important factor in preventing much social and industrial unrest, but would also add to the attraction of the Canadian Prairies for settlers. The higher standard of education, even if it should mean only an ability to read and write, would enable the settler to keep in touch with the rest of his country and the world, and would greatly lessen the monotony of the pioneer's life.

It is a big proposition, but there is here an opportunity for doing a much needed service for the illiterate immigrant that will return abundant profit to the Dominion and the Provinces.

#### WOODLANDS SECTION FOR THE A. P. & P. A.

The Canadian Pulp and Paper Association need not be unduly puffed up, but there is a source of satisfaction in having started two movements that have been found good enough to be copied by our American confreres, the American Paper and Pulp Association. The Technical Section of the C. P. & P. A. was followed so closely by the organization of the similar section of the A. P. & P. A. that it would be hard to decide where the idea first took root. There is no question however, about the Woodlands Section. The Canadian Association some years ago realized that the emphasis placed on the management of mills along scientific lines should be extended to the scientific management of the forest, on which the life of the mill depends. It was in November 1917 that a meeting was held to plan for the organization of the Woodlands Section, and there is no question of the good that has already been accomplished by this youngest member of the association family.

It is gratifying to learn that the American Pulp and Paper Association contemplates the formation of a Woodlands Section at the meeting to be held in Chicago on November 14th. We venture the opinion that an attractive woodland section would, if formed fifteen years ago, have accomplished a great deal to prevent the serious situation as regards pulp wood that now faces the American mills. Foresters in the

United States have been preaching conservation and re-production, and in Canada likewise. The principal difference is that in Canada some action has been taken, while in the United States, for the most part the matter is still in the vocal stage. We expect that the new association will have not only a financial support and complements of the manufacturers, but that it will have real co-operation from the pulp and paper manufacturers.

The forestry committee has gone carefully over the ground, and has made careful and important recommendations. The new section should succeed in putting these recommendations into effect. No doubt some of the prescriptions will not taste good to some manufacturers, but if the situation is to be cured a certain amount of medicine will have to be taken, and the sooner and more carefully it is taken the more rapidly will be the patient's recovery.

In connection with this important work that the American Association has undertaken, the secretary has sent out cards with seven questions to be answered. Any manager with reasonably accurate and recent records can answer them in twenty or thirty minutes, and the information will enable the secretary to assemble this information in a form that will be of great benefit to every mill, and the more accurate and prompt the response, the greater will be the benefit. Canadian mills have been courteously included, and should esteem it a privilege to give full information, in order that there may be an intelligent effort made to relieve what is coming to be an extremely serious situation for the paper industry on both sides of the line. We are rapidly approaching the time when this industry will know no boundary line. Co-operation in many respects has already made great progress, and accomplished important results. In approaching this problem, co-operation should be made use of. Nothing is more fundamental to the success of the industry than the forestry situation, and every mill will be acting in its own interests by giving the American Pulp and Paper Association all the assistance possible in their worthy effort to get at the facts of the case.

The latest report of the Government on pulp and paper exports shows a most remarkable increase. Comparing August of 1920 with August, 1919, we find a grand total of very nearly \$20,000,000 against a little over \$9,000,000 a year previous, while for the first five months of the fiscal year the increase has been almost 100 per cent. An examination of the more complete statement shows that the increase in quantity is not in proportion to the increase in value although there is a very substantial gain in the quantity shipped. It must be remembered also that the consumption of paper has largely increased within the Dominion so that the industry has certainly a record to be proud of.



# Convention of the Canadian Paper Trade Association

Many problems affecting the jobbing section of the Canadian paper trade were discussed and some of them solved at the annual two-day convention of the Canadian Paper Trade Association held in Toronto last week, under the chairmanship of John Martin of Winnipeg. The gathering brought together representatives of the paper jobbing trade from most parts of the Dominion, the Western Provinces and Ontario sending the largest representation. The jobbers were joined in their deliberations on trade matters by a number of the mill representatives and in the course of several conferences which were held excellent relations were shown to exist between the producer and the distributor of paper. The report of the Mill Relationship committee indicated that there had been considerable improvement in various matters touching the interests of mill and jobber, but a few of the mills were still going over the heads of the jobber and selling direct to the printer. It was contended that the jobber should be placed in a fair position in relation to the manufacturer touching the matter of resale prices, the jobber stating that they were ready to play the game if all the mills would do the same. During their discussion it was brought out that the Canadian paper trade is now face to face with British competition and it was stated by one of the Western delegates that he had positive information that the British Paper manufacturers were determined, even to the extent of expending large sums of money, to get hold of a portion of the Canadian paper trade. It was stated that representatives of English houses were already in Canada offering their goods at attractive prices and in any quantity, with favorable freight rates which would chiefly benefit Western jobbers in view of the 80 cents freight rates between Liverpool and Vancouver. These and other matters, including classification and the jobbers cost of running his business were all thoroughly discussed with the result that there will be a better understanding between the jobber and the manufacturer touching these matters in the future.

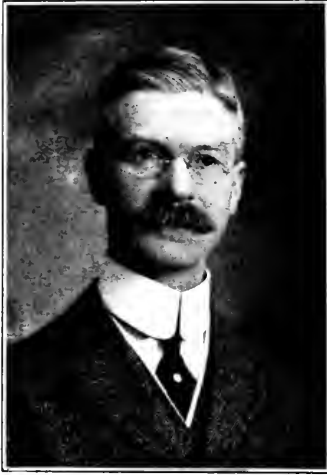
A feature of the gathering was an address by Mr. W. C. Ridgway, General Secretary, of the National Paper Trade Association of the United States who dealt with the relationship between jobbers and manufacturers of paper and with trade conditions generally in the United States. Mr. Ridgway pointed out that the problems facing the trade in this country were practically the same as existed in the United States, although there were only two or three big paper firms who were not dealing direct with the jobbers in the distribution of their product. This satisfactory condition of affairs has been brought about largely through persistent effort and organization on the part of the National Paper Trade Association with the result that during the past several years the mills generally have been willing to market their product through the paper merchants, although an out-break of direct selling was anticipated when the output caught up with the demand in the more or less distant future. His association had been endeavoring to educate the manufacturer and merchant in the idea that they were both component parts of

one and the same business and if that principle could be established firmly in both countries, along with the application of common every day business sense, all problems existing between manufacturer and distributor would be solved.

As to the outlook for the paper trade in the United States, Mr. Ridgway said that one man's guess was as good as another's and he, himself, was not prepared to say what would happen. The fact was, however, that production capacity in the United States had not increased to a point any where near the normal consumption of paper during the past five years. It had been figured out that the normal average increase in demand from 1900 to 1910 had been approximately 10 per cent, varying according to the grades. How much productive capacity exceeded the demand at the beginning of the five-year period no one knew and it was impossible to tell how much the War demands have been over and above the natural increase in the demand for paper. As a matter of fact the War demand had only begun at the time of the Armistice in November 1918. It is pointed out that the present demand in the United States had been eliding since June the 1st and according to figures it is still above normal. September business showed a slight increase over August and it was generally expected in the States that after the election, business in most lines would start to take on new life.

Mr. Ridgway said that the great factor in the demand for paper in the United States had been the tremendous demand for advertising. Big advertising campaigns were being staged and would continue as long as the present tax laws over there were in existence. Many corporations were spending huge sums of money on advertising on account of the taxes levied on earnings and for the good that would accrue in the future when taxes would not be so high. As long as advertising kept up there was no chance in the world of a lessening in the demand for paper. Mr. Ridgway said that the slaughtering of a number of lines in the spot market was having a psychological effect upon the paper trade but he could not see any possibility of a drop in prices of paper, except in the spot market, in the near future. The situation in the United States today was not in any way in a dangerous condition. Never had stocks been so low and many houses were without a sheet of book paper. It would take three or four months before stocks were built up to a point where the merchant could do business on a proper basis. The average mill has from three to four months' orders on its books and prices have reached what Mr. Ridgway termed the saturation point. A feeling was beginning to develop among customers of paper that if the product was to go any higher they would endeavor to get along without it.

On the subject of the protection of jobbers by manufacturers the Secretary read a complete statement based on reports from the paper jobbers, on that topic. It was stated that the wants of a publisher are largely in news and book and coated papers and it would appear that as the situation is in Canada to-day this field is, in many respects, a mill proposition. "It



Mr. CHARLES E. GRAHAM,  
Of Hamilton, Ont., who was elected President of the  
Canadian Paper Trade Association at the  
annual meeting in Toronto last week.

does not seem to be the view that it will be practical to turn this particular business into the hands of the paper dealer, but the opinion is expressed that the mill should not accept orders from job printers who may publish specialties from time to time and in this way buy certain lines to better advantage than the ordinary job printer who does not pose as a publisher. The point is very well taken that a list of publishers in Canada who are to be recognized as such by the mill and by the paper merchant would be prepared and approved by both the Associations."

#### An enjoyable banquet.

The entertainment features of the convention had been well worked out by Secretary N. L. Martin and included several luncheons, a banquet at the King Edward Hotel on Wednesday evening and a trip around Toronto Bay in the Harbor Commissioners' boat where the harbor improvements were viewed. The dean of the paper trade in Canada, Mr. John F. Ellis presided over the banquet and extended a hearty welcome to a large number of guests from among the jobbing and printing houses in Toronto. There was excellent vocal music, some lusty chorus singing and an amusing climax when several of the officials of the Association were ushered into the hall in costumes representing the industries of the Canadian west, from the industrious squaw to the B. C. fisherman and Alberta cowboy. In the course of the evening the toast of the pulp and paper industry of Canada was proposed by President elect Graham of Hamilton and responded to by Edward Beek of Montreal who dealt with pulpwood and forestry conservation in Canada in an able paper which has previously been read and published. "Our Guests" was responded to by W. C. Ridgway of New York, F. H. McPherson, President of the Detroit Sulphite and Fibre Co. and Atwood Flemming, job printer, Toronto. Mr. McPherson gave the gathering an extended description of the profit-sharing scheme that is now in force with his company and is working smoothly and to the advantage of

the firm and its employees. \* Mr. Flemming gave a straight from the shoulder talk to the jobbers and dropped a good many hints as to how the business relations between the jobber and the printer might be improved.

(\* See Pulp & Paper, p. 485, May 6, 1920.)

#### Officers Elected.

The following officers were elected by the Association for the current year:

Honorary President, John F. Ellis, Toronto; President, Chas. E. Graham, Hamilton; 1st Vice-President, Ernest Dawson, Montreal; 2nd Vice-President, Chas. J. Kay, Vancouver; Treasurer, E. S. Munro, Toronto; General Secretary, N. L. Martin, Toronto.

It is decided to hold the next Annual Meeting of the Association in Montreal, in the latter part of October or the beginning of December.

#### The Delegates.

The following delegates were registered at the Convention:

E. S. Munro, Wilson Munro Co.; J. R. Rolland and F. T. Haney, Rolland Paper Co.; A. W. Whyte, Whyte Paper Co.; W. J. Finlay, United Paper Mills Co., Ltd.; Fred W. Halls, Fred W. Halls Paper Co., Ltd.; J. B. Larkin, Federal Paper Co., Limited; Edward Bogin, McFarlane, Son & Hodgson Co.; Fred Smith, Smith, Davidson & Wright Ltd.; Geo. H. Scott, L. B. Cannon and John F. Ellis, Barber, Ellis Co., Ltd.; Wm. J. Thompson, John Martin Paper Co. Ltd.; J. L. Kenny and C. W. Graham, Buntin, Gillies & Co., Hamilton; Mr. Ewing, Victoria Paper & Twine Co., Montreal; Jas. Home, Beveridge Paper & Twine Co.; C. V. Syrett, Victoria Paper & Twine Co., Toronto; Geo. Wilson, Clark Bros. & Co., Ltd.; Alfred Phillips, Phillips Paper Co., Winnipeg; C. J. Kay, Columbia Paper Co. Ltd., Vancouver; Wm. C. Ridgway, National Paper



JOHN F. ELLIS,  
Hon. President Canadian Paper Trade Association.

Trade Association, New York; Geo. C. Winlow, Canada Paper Co., Toronto; John Martin and A. C. Hunt, John Martin Paper Co., Ltd., Winnipeg; N. L. Martin, General Secretary, Toronto; H. H. Love, W. J. Gage & Co.; E. H. Schofield, St. John, N.B.; H. F. E. Kent, Kinleith Paper Mills; Chas. Davidson, Howard Smith Paper Mills; I. H. Weldon S. F. Duncan and J. B. Piper, Provincial Paper Mills Ltd.; Geo. Pauline, Ritchie & Ramsay Co., Ltd.

#### PAPER TRADE ON FIRM BASIS.

Following is the address of President John L. Martin, of Winnipeg, which contains some interesting comment on paper trade conditions in Canada:

Coming together as paper merchants from all over this wide Dominion it seems to me that this presents an excellent opportunity for us to consider the main facts that present themselves in connection with the industry in which we are engaged. The development of the paper business in Canada has been so rapid that any review which may be made is bound to fill the observer with little short of amazement. While these facts are, in a general way, known to us all, we who are in the business necessarily have our faces so close to the picture that perhaps it is not out of place for us, at this time, to stand back a little way along with the casual observer and take a momentary glance at the whole field.

The growth of the paper business in Canada has necessarily been made possible by the fact that over our mountain ranges, hills and valleys a kindly Nature has spread out for us a great carpet of spruce, fir, and poplar, the greatest untapped source of pulp wood in the world. For centuries the world had stood back and looked upon our Canadian forests as being merely the abode of wild animals and the hunting ground for wandering bands of Indians, but the ever receding forests of other nations finally compelled the attention of the Capitalist to those virgin bush lands. The amazed settler in the far backwoods saw, springing up around him, the buildings of huge pulp and paper mills dotted throughout the wide expanse of this northern half of the continent. The result of this has been that whereas in 1911 the total exports of pulp and paper from Canada amounted to the sum of \$8,600,000, last year these exports had reached the magnificent total of \$104,800,000.

The conditions throughout the world, owing to the Great War, have been such as to improve our normal opportunities for foreign trade, and it is to the credit of our manufacturers that they have risen to the occasion and that these opportunities have been taken advantage of to the fullest extent. Were it not for this fact there is no doubt but that the rate of exchange against Canada would be very much larger than it is to-day. When we, as paper merchants, are apt to cavil at the shortage of supply perhaps it is well for us to bear this fact in mind. On the whole while, at times, the rations of paper which the kitchens of our paper mills have placed before us have not been in the nature of a nine course banquet, at the same time our plates have not been empty and we have been able to keep our bodies and souls together.

It is interesting to notice that the public at large and even our tardy Federal and Provincial Governments are gradually awakening to the importance of conserving for the future the vast supplies of pulp-wood which Nature has given to us. The subject of fire protection and reforestation is now very much in

the foreground and if the efforts of our paper manufacturers can be backed up with wise and efficient legislation then the everlasting permanency of the industry in Canada should be assured.

As paper jobbers we are interested in looking a field to see what the conditions of the industry are in other lands, and as to what the prospects are for a resumption of pre-war competition.

Briefly it may be stated that paper conditions are much the same all over the world in that all grades are scarce and high in price, and that the output is far below the demand. In Europe the factors entering into the general shortage of paper are somewhat different than on this continent. Production, decreased during the war, will be a long time in reaching pre-war levels. On the Continent many paper machines were destroyed or dismantled, and while many of these are again being set up, it will take a long time to get them into operation again. In other of the war countries, the industry is suffering for lack of coal, chemicals and pulp but particularly for coal. In the



JOHN MARTIN,  
Retiring President C. P. T. A.

Scandinavian countries, mills have been running full, though with production below normal on account of labor troubles.

In England, conditions are somewhat different. British paper manufacturers are steadily recovering normal production, but the demand for paper stocks from Europe and from other foreign countries has far exceeded the production of English mills. But few new machines have been installed, and this has mitigated against overcoming the increased demand.

Present conditions in the United States are perhaps best indicated in the fact that on the best evidence obtainable the productive capacity of the paper mills has been increased only 5 per cent in the past year, while the normal increase in the demand for paper is estimated to be somewhere between 8 per cent and 12 per cent. Except for the fact of the general feeling that commodity prices must soon assume a downward trend, there seems no reason to believe that there

is anything in the paper situation itself in the United States to indicate lower prices in the near future.

At home the same general stringency in paper stocks continues to prevail, with but few signs of immediate improvement. Basic raw materials are still very much below the demand, and the mills are having the greatest of difficulty in running full owing to the shortage of bleach, sulphite, and groundwood.

In book and bond papers production seems to be increasing somewhat, although recently some mills have been running short on account of lack of bleached sulphite. Mills are looking orders for January and February delivery, and orders booked months ago are only now being delivered to the jobbers.

Coated papers are still very short. Several coating mills are running only one shift owing to lack of supplies of body stock. If this could be secured they could run continuously for some months on orders at present booked.

In the newsprint field conditions are much similar, although most of the larger newspapers are now securing necessary supplies. Sheet news, however, remains very scarce, and the smaller publishers are not as comfortable as they would like to be, and jobbers are finding it most difficult to obtain adequate supplies of this line.

The demand for kraft and manilas seems to be fully maintained and kraft prices were advanced just recently a matter of ten dollars a ton.

In considering the factors which have operated in the development of the paper industry in Canada, I feel quite justified in claiming that as distributors of paper products, we have played a considerable part in the process of creating new demands for paper. This has been done by our own direct advertising, as well as through the thorough manner in which our travelling representatives have persistently preached the importance and necessity of using paper. At the same time we have emphasized the need of educating the consumer to the use of paper of the better qualities.

A further factor which has operated to improve the output of paper has been the elimination of some former abuses.

May I now briefly refer to the activities of our Association during the past year? Many obstacles have faced us, and conditions existing, were, at times, beyond our control. Nevertheless, we are proud of what we have achieved, not only because of the better understanding among us, but also because of the service we have been able to render one another.

"Unity is Strength," and by this we have achieved a strong feeling of consideration for the other fellow. The service rendered to each other has meant profit, not larger profit for selfish gain, but profit in binding us together on one common ground, and, thus, enlarging our vision. We see around us, as never before, close cooperation among the members of our trade, and in addition the manufacturers, manufacturing stationers, and the wrapping paper people are working in closer harmony in their own lines, to the betterment of all.

Since this Association was formed we have had an opportunity of testing out its real value to us, and it seems to me that from the general benefits that have so far resulted, we have reason to hope for much in the future. The conditions of the past few years, however, have been favorable for the development and the working out of the plans of the organization. The real test of our good will and real interest in the Associa-

tion will come when we are further involved in the resumption of more normal conditions in all industrial and commercial life. I am hoping that the friendships and the understanding now existing will do much to carry us all through any such period of stress as we may be called upon to face.

I desire also to emphasize the situation created by the rapid and persistent increase in costs of paper during the past few years. Every dealer has felt the pressure of the demand upon his resources in taking care of the increased investment in his stocks of paper, owing to the advanced prices. But I venture the opinion that paper stocks in the hands of the legitimate paper dealer have increased in volume as compared with the period before the War. If I were to hazard a guess I would say the paper jobbers in Canada are carrying at present, stocks worth seven million dollars. This has helped in no small measure in the development of the industry in Canada. In addition I should like to suggest that there has been an ever increasing disposition to give marked preference to the handling of Canadian made papers. These factors, as well as others, would seem to justify our confidence that the paper manufacturers will give early and favorable consideration to our urging for more protection for the legitimate paper jobber, whom we understand to be a dealer carrying a general stock of various grades of regular stock sizes and weights of paper, from which any quantity may be sold.

During the year many important meetings of the various sections have been held.

There was a joint meeting of the mills and representatives of the jobbers held at the Board of Trade in Montreal, on December 22nd, of last year, on the subject of the increase in freight rates, at which your President and Secretary were present. This meeting was followed by a meeting of our Executive, at which we dealt with a complaint from one of our western members as to a manufacturer selling a firm of lithographer-manufacturers in Vancouver on the same basis as jobbers. We also discussed the credit bureau, which was then established, and which, by the way, is working very satisfactorily. We also arranged at that meeting that the Secretary of this Association was personally to take up direct with any of the mills any matter of complaint with respect to any individual mill.

In addition our Secretary visited the Western sections of the Association, and, with him, your President held meetings in Winnipeg, Calgary and Vancouver.

As a result of representations made to the mills following our last annual meeting, several important matters were arranged. One of the most important of these was the adoption by the mills of a wider spread over the cost price, in the suggested resale prices. A request made to the mills for a reduction in the number of grades of white writings has also had favorable consideration, and has been satisfactorily met, as has also been the suggestion to standardize the weight of envelope papers.

As the result of a conference of your President and committee with the manufacturers an arrangement for a marginal protection of the Ontario and Quebec jobbers on manila writings was successfully completed.

Our Secretary has also instituted the publication of a bulletin under the name of the "Canadian Paper Trade Association News" in which he has kept the members informed of many important matters affecting the trade.

In retiring from this honorable position, as president of this Association, I wish to thank our members for the hearty support given me.

For my successor I know and feel confident he will receive the same good, friendly, and co-operative support that exists among us all, and, in conclusion, I am pleased to state that no other organization has appealed to me so much as the Canadian Paper Trade Association, because it works in harmony with friendship, consideration, co-operation, and a desire for the betterment of all, and I am confident that we will go on to bigger things.

### THE PROTECTION OF PAPER DEALERS

The following composite statement as to protection of jobbers by manufacturers was read by Secretary N. L. Martin and evoked an interesting discussion:

In the Canadian Paper Trade Association News, issue of September 3rd, the request was made that the members of the Association should intimate their views on the subject of "The Protection of the Paper Dealer by the Manufacturer." A number of replies were received. The object of this request was that diversified views could be obtained from members of the Association in different parts of Canada and that these views might be arranged in a composite statement which would indicate the feelings of the paper jobber as to the present situation, and as to how it could be improved upon.

An examination of these replies shows a uniformity of view which, in the light of trade conditions, is perhaps not to be wondered at.

The selling field for the paper dealer may be roughly summarized as including the publisher, the lithographer, the printer, the commercial stationer and converter, and large corporations.

The wants of the publisher are largely in news and book and coated papers and it would appear that as the situation in Canada to-day is that this field is, in many respects, a mill proposition. It does not seem to be the view that it will be practical to turn this particular business into the hands of the paper dealer, but the opinion is expressed that the mills should not accept orders from job printers who may publish specialties from time to time and in this way buy certain lines to better advantage than the ordinary job printer who does not pose as a publisher. The point is very well taken that a list of publishers in Canada who are to be recognized as such by the mill and by the paper merchant should be prepared and approved by both Associations.

The lithographer is also, to a very large extent, in the hands of the book and coated mills, and, insofar as these lines are concerned, however much we may agree with the theory that the lithographer should not be entitled to buy his supplies in any lower market than the job printer, with whom indeed he is frequently in competition, at the same time there appear to be a good many practical difficulties in the way of putting the matter on a different basis. The principal difficulty appears to be one of precedent. Years of continuance of this practice has strengthened and enriched the favored ones who, no doubt, seriously and strongly object to any attempt to take away their present advantages. A different situation, however, arises with respect to the bond paper requirements of the lithographing trade. A good many of the lithographers use a special, watermarked paper, but the jobber is expected to carry high grade stocks of bonds

from which the lithographer selects odd lots from time to time, or will sort up his stock while waiting for a shipment from the mill. Fair minded persons must recognize that the practice of the mills selling bond papers direct to the lithographer is creating a situation which is absolutely unfair to the competitor of such lithographers. It is also unfair to the paper dealer who finds one of his active markets taken away from him. The uniform feeling of the paper dealers is that the mills should be prevailed upon to leave in the hands of the paper dealers the bonds and writing trade with the lithographers large or small, in trade or private watermarks.

In their relations with the job printers, the paper dealers find they have little cause for complaint, but the barnacles of an old custom still cling here and there and should be removed.



N. L. MARTIN,  
Re-elected Secretary C. P. T. A.

When we come to consider the trade of the commercial stationer we find again existing a privileged class. Many of these commercial stationers are nothing more or less than retailers, the majority of them having no printing or manufacturing plant of their own. The mills would lose nothing by diverting this trade through the paper dealer. There are many more spots throughout Canada which the manufacturer, by the wave of a magic wand, could instantly heal.

Another evil thing which the paper dealer has to meet with day by day is the fact that many large corporations buy their bond papers with private watermarks direct from the mills. This practice is as great an injustice to the job printer as it is to the merchant. The view has been expressed that the proper place for the large corporation to buy its paper is from the printing house which does its work, except indeed in cases where the corporation has a printing plant of its own, in which case it might properly be conceded that the trade in such case should naturally fall into the hands of the paper merchant.

The paper merchants of Canada carry large, individual stocks and turn over probably as much as fourteen million (\$14,000,000.00) dollars worth of Canadian made paper in a year. The distribution of this com-

paratively large total costs the mills nothing. It would be inconceivable for the mills themselves to take care of the diversified wants of the consumers of paper and it would seem futile to argue that the paper merchant has a firmly established position in the trade of the country. The paper merchant, therefore, with his large investment, his selling organization and with his financial burden is entitled to the recognition and respect of the paper manufacturer. He should get a deferential discount as against all other buyers of the product of the mill, no matter how small that discount on certain lines or certain quantities may be. The situation must be looked at by manufacturers and dealers without thinking solely of their own immediate interests. The merchant is frequently faced with the necessity of quoting dangerously close figures in certain orders because of the fear that manufacturers will consider the buyer or the business to be of sufficient importance to justify direct quotation at practically the same price as is quoted to the dealer, or that some agent will be able to buy as cheaply and, having little or no expense to pay, will take the business on the barest possible margin. If some recognized list of those houses which the mills consider as "mill accounts" could be prepared and placed in the hands of the merchants this would at least be a step in the right direction.

It is the feeling that if these difficulties could be overcome it would be for the good of the whole industry. It is a matter for the pulp manufacturer, the paper manufacturer, the wholesaler, the lithographer, the printer, the converter and the consumer to work together with one mind towards the most economical and the most practical method of supplying the product of the mill to the use and benefit of the ultimate user of the product.

#### GROWING ONE TREE, CUTTING FOUR.

At a conference held at the White House a dozen years ago, while Roosevelt was President, it was stated that the timber supplies of the nation were being used up three times as fast as they were being renewed by growth. The correctness of that statement having been doubted, more complete surveys have been made with the result that the Forest Service now declares that the United States are losing more than four times what growth replaces. Our United States neighbors are now realizing that necessity will soon compel them to restore their forests instead of using them up. As in Canada one of the most pressing duties of the forestry service is the protection of all forest lands against fire—cut over lands as well as the merchantable timber. A proposal of legislation to provide for this is the first and most important recommendation of the recently issued report of the U. S. Forestry Service on the subject.

It is not surprising that Canada and the province of Quebec in particular should long ago have awakened to the lesson taught by the wasteful methods of American lumbermen, and paper makers, and should have taken early and effective means to prevent further destruction of their own forests by those who have made such profligate employment of theirs.—Quebec Telegraph

The real trouble with the world today is not that there isn't money enough to go around, but that there isn't character enough to go around.—Springfield Union

#### PROPOSE ONTARIO GOVERNMENT PAPER MILL.

An interesting announcement in paper trade circles this week concerned a plan for operating a pulp and paper mill as a provincial enterprise, which has been receiving the serious consideration of the Ontario Cabinet for the past three months. The establishment of such a plant as a publicly owned and operated concern is stated to be by no means improbable. According to the plan under consideration the mill would be established in the Nipigon district at some point to which power could be transmitted from the new Hydro-Electric power development plant at Nipigon Falls.

While neither the details of the plan nor the general policy has yet been decided upon, it would occasion no surprise in Government circles if a favorable conclusion was reached. The plan is unique in that it would be the first time an Ontario Government had ever undertaken the utilization of the province's pulp resources for the production of paper. If decided upon it is probable that the large timber limit in the district chosen will be set aside for the project.

The Nipigon Hydro-Electric plant will have a surplus of power available for some years. A Government owned pulp mill, supporters of the idea argue, would furnish a good customer, and a basis of a mutually satisfactory contract for power. Another important feature from the Government's standpoint is that the results obtained in a plant of this nature would provide the means of ascertaining with far more definiteness than is now the case, what remuneration the province is entitled to in return for timber and pulpwood concessions granted to private enterprises.

#### FOLLOW THE RAINBOW TO THE POT OF GOLD.

(Reprinted from the Passaic Daily Herald,  
May 17, 1920).

Do you remember the childish superstition about the pot of gold, buried where the rainbow touched the ground? But no one has ever found the end of the rainbow.

Many a poor wanderer has followed the glittering lure of "easy money," only to return after wasted years, weary in body and broken in spirit.

The home stayer and the home makers are men who find prosperity and happiness.

The worker who wanders from job to job, and from town to town, is following a rainbow that has no end.

Serve your own selfish interest by staying with the employer who pays a just recompense for your skill and energy.

Invest years of faithful service. Your reward will come in promotion, and your employer's good will.

There are days when men are too few for the work that must be done.

There HAVE been years (and may be again) when men were plentiful and jobs were few.

When the day comes, that men must be laid off, be one of the workers selected to stay.

Your employer isn't deaf and dumb and blind.

If he were he wouldn't be boss for long.

And he knows the men who are loyal, when the temptation to follow the rainbow lure is strong.

Keep to the work you know best—it's a necessary law, and good business ANY time.

Opportunity can be spelled with four letters—  
WORK.

# Utilization of Sulphite Waste Liquors

By A. KLEIN.

Translated by CLARENCE JAY WEST, Information Department, Arthur D. Little, Inc.

Technical men have been interested in the question of the utilization of the waste liquors of the sulphite process, ever since the process itself was discovered. Muller published the first part of his "Literatur der Sulfittablage" in 1910, and a supplement to the same in 1914. (This has been revised and brought up to date by Johnson and Hovey, "Utilization of Waste Sulphite Liquor," Forestry Branch, Department of the Interior, Canada, Bull. 66; 1919. See Pulp and Paper Vol. 17, p. 526.) Since then various suggestions have been made, some of which have been useful, while others have been questioned. Among the latter the most significant is the suggestion of Strehlenert to prepare coal from these liquors. The process has been declared unsatisfactory because the use of a very high pressure is necessary, and further because the necessary rapid rotation of the application and release of the pressure would very quickly injure the apparatus. Strehlenert meets these objections by pointing out the Norway experimental plant, which has been in operation for some time and which shows no defects in the apparatus. One naturally asks, then, why a profitable process, such as Strehlenert suggests, for the production of fuel does not find general application today, when not only is the price of fuel advancing from day to day, but also, when the possibility of obtaining fuel in suitable amounts is very limited. This question has not been answered. This case is quoted to show how a process, that undoubtedly offers new and promising possibilities, has been judged unsatisfactory and how this affects its rapid and general introduction.

It is probably true that Sweden is, today, the country in which the practical utilization of waste sulphite liquors is most advanced; at least is it true that all the factories utilize their liquors as far as the fermentable constituents are concerned. Of the other countries, Canada shows a marked interest in this question. In 1916, Canada used 727,945 cords of wood in making pulp by the sulphite process, while in 1917 this use amounted to 853,489 cords. 1 cord is equal to 128 cubic feet. The yield from a cord of wood, as obtained in Canada, varies considerably. This variation depends not only on the method of cooking in the individual factories, but also on the source of wood, which determines, to some extent, the cellulose content.

The Canadian Census of Industry (1917) gives the following yields per cord of wood: Using the sulphite process, the plants in British Columbia obtained 1,137 pounds; those in New Brunswick, 1,116 pounds; in Ontario, 961 pounds; in Quebec, 1,039 pounds; while the average yield for all of Canada was 1,063 pounds. The difference between the yields in Ontario and in

British Columbia is nearly 30 per cent of the total yield produced in Ontario.

The average yield, calculated on a cord of wood, is 1,061 pounds (482.2 kg.). Considering a cord as 3,624 cubic meters (128 cubic feet) and a cubic meter of wood as having 0.7 cubic meter of actual wood, the average yield for one cubic meter of wood is 190 kg. (418 pounds) which, for German practice, is low. In 1917, 25 plants were in operation and produced, on the basis of the above figures, 406,000 tons. For 1920, the yield of the 27 plants is calculated as 690,000 tons, of which about 190,000 tons is to be bleached pulp. From this surprisingly rapid development it is clear that Canada must be specially interested in the utilization of the sulphite waste liquors.

In the same way that the United States has a Forest Products Laboratory at Madison, Wisconsin, so the Canadian government has established a similar laboratory at Montreal. Here B. Johnson and R. W. Hovey, under the direction of J. S. Bates, have and are attempting to solve the problem of the utilization of the waste liquors. In 1919 they published a compilation of the literature (mentioned above) with general statements of interest to all countries using cellulose.

The composition of the pine, according to Klason (Chem. Zusammensetzung des Fichtenholzes) is about 53 per cent cellulose, 14 per cent carbohydrates, 29 per cent lignin, 0.7 per cent protein, 3.3 per cent rosin and fat. These figures are not the same for American woods, grown under quite different conditions. Spruce (*Picea nigra*) and hemlock (*Tsuga canadensis*) are the two woods most used for the sulphite process. Spruce contains about 55 per cent cellulose, 26 per cent lignin, 0.75 to 1 per cent rosin and fat and 11 per cent pentosans; hemlock contains 49 per cent cellulose, 26 per cent lignin, 1.75 per cent rosin and fat and 12 per cent pentosans.

The cellulose is determined after removal of rosins and fats by treatment with acetic acid and chlorine, as suggested by Cross and Bevan. Since Reuker (Bestimmungsmethoden der Zellulose) and Schwalbe (Chem. Betriebskontrolle) consider this method to be the most reliable, these figures may be accepted as the cellulose content. Lignin was determined by decomposition with 72 per cent sulphuric acid (according to Fellenberg). Even though Schwalbe believes the determination of the methyl number according to Penedikt and Bamberger to be the most suitable method for the determination of lignin (i. e. p. 70) still Fellenberg's method is widely used and, until a series of comparative determinations show the unreliability of Fellenberg's method, the results by this method can be accepted as correct. The pentosan content was determined by the aid of the furfural determination.

In this connection an interesting observation should be made. In white spruce two samples taken at a distance of 48 feet apart showed a difference in cellulose as much as 4 per cent. The lignin content seems to increase with the distance from the ground, but not in proportion to the decrease of the cellulose content.

H. Bergstrom has determined that during the cooking of one ton of cellulose 10 kilos (22 pounds) of

\*Wocheblatt für Papierfabrikation, 51, nos. 24 and 26, pages 1704-1706, 1840-1842 (1920).

Editor's Note:—This article is in the nature of a supplement to the work of Johnson and Hovey, particularly insofar as it reviews material in European journals during the war that were not available in Canada.

methyl alcohol are formed (*Z. angew. Chem.* 1910, p. 1823; *Papierfabr.* 1909, p. 1314). 5 to 5.5 grams of methyl alcohol are found in each liter of the condensate from the gases blown off during the sulphite cook. This condensate also contains about 10 grams of sulphur dioxide and 1 to 1.5 liters of oil, furfural, etc. per ton of cellulose (*Papier J.* 1914, p. 389; *Papierfabr.* 1914, p. 1040). Bergstrom has fractionally distilled this oil with the following results: 7 per cent boils between 150-160 degs., having a specific gravity of 0.845, and containing no terpene; 55 per cent boils between 160-190 degs., and consists largely of cymene; 17 per cent boils between 190-210 degs., and has a specific gravity of 0.951. The distillate between 205-250 degs., is a solid of the composition  $C_{10}H_{16}O$ , while the fraction boiling above 250 deg. has a density of 0.925 (*Papierfabr.* 1912, p. 359).

The composition of the sulphite liquors varies, naturally, according to the method and the degree of cooking and the kind of wood used. Johnson and Hovey give as the average density of the liquor 1.05; they state that it contains 10 to 15 per cent of dry substance, of which about 12 per cent is organic and 1 to 1.5 per cent is inorganic matter. H. Wichelhaus states, however, that the liquor contains 82.8 grams of dry residue per liter, of which 68.3 grams were organic and 14.5 grams were inorganic (Hagglund, *Sulfitablauge*, p. 4; Wichelhaus, *Papier-Ztg.* 1895, 1186; Hoffman, *Handbuch*, p. 1622).

Tollens and Lindsay have proven the presence of sulphonic acids, sugars, gums, vanillin, and other substances (Muller, l. c., p. 28; also Muspratt, *Tech. Chem.* p. 1557). The very complete work of Klason (*Tekn. Tidskr. Afd. Kemi och Bergsvetensk.* 1893, p. 43; *Kem. Tidskr.* 1897, p. 133; *Arkiv Kemi* 1908, nos. 5 and 6; *Tekn. Tidskr.* 1908, no. 7; and other references) should be specially mentioned, but I must disagree with Klason and return to my original statement before the Zellstoff- und Papierehemiker Vereins, 17, 11, 1905 (*Papier-Ztg.* 1905-6, Nos. 103, 105) that the change of the lignin during the sulphite cook is not entirely cleared up, since ester formation, condensation of the bisulphite with aldehyde and ketone groups, addition to the double bonds or a sulphonation is possible.

Colloidal-chemical considerations lead to the view that the process of sulphite cooking cannot be explained by a simple chemical formula. Since we know that wood is far from a uniform chemical substance, Schwabe is justified in pointing out, as he has clearly done, that the substance which we call ligno-cellulose is really only a cellulose-rich mixture; it is clear that with variable raw materials we must expect the decomposition products to be very different. This is specially true, since the varying strength and composition of the cooking liquors (there is 50 per cent difference in the SO<sub>2</sub> content of the liquor of various plants), the widely varying temperatures (128 to 145.6 degs., and even higher in some cases) and the variable reaction time (the cooking time varies from 9 to 10 hours to 25 to 28 hours) all affect the composition of the waste liquor.

It is therefore felt that it is a mistake to use the average composition of the waste liquor as an established basis from which to judge the possibility of utilizing these liquors. It is probably better that each plant determine for itself the most favorable composition from time to time. This is confirmed by the

fact that even in the best regulated sulphite plants, unforeseen difficulties arise. Compilation of the figures may be found in Hagglund and in Schwabe's *Referate*.

The difficulties which may be caused by these liquors are well known. Certain mills are hindered at times in their production because of them. Other mills concentrate them without regard to the cost (Rattiman), while still others dump them in the sea (Konigsberg). In some cases (Konigsberg) the liquors have been made the basis of large irrigation projects, while in other cases (Wloclawek) they are evaporated on large surfaces during dry seasons. The literature upon these uses and upon the losses which they cause is very interesting.

J. H. Vogel has repeatedly presented results along these lines before the Zellstoff und Papierehemiker Verein (*Papier-Ztg.*, 1906, pages 1278, 1314, 1355; 1907 961, 1010, 1054, 1098; 1908, 3855, 3890, 3931. *Papierfabr.*, 1911, page 438). The work of Gottestein (*Papier-Ztg.*, 1899, page 1556; *Wochbl. Papierfabr.*, 1912, page 4329) and Hofer (*Allg. Fischerei-Ztg.*, 1908, page 71; 1915, No. 20-21) are also worthy of mention.

Other discussions of the waste liquors and the composition of the woods used in the process may be found in Hoffmann's *Handbuch*, in Stutzer's "Arbeiten über Einwirkung auf Pflanzen" (*Deutsche Landw. Pr.*, 1903, page 725), in the work of Lassar-Cohn (*Papier-Ztg.*, 1908, page 3379), Luerssen (*Z. Hyg.*, 58, page 121), Schmidt Nielsen (*Papier J.*, 1916, pages 17, 196), and specially in the work of J. König and E. Becker (Bestandteile des Holzes und ihre Hirtschafliche Verwertung, being No. 26 of *Veröffentlichungen der Landwirtschaftlichen Kammer in München i. W.*).

Following the order given by Muller, alcohol production from the waste liquor is the first subject to be considered. In this connection the best work is that of Hagglund, "Sulfitablauge und deren Verarbeitung auf Alkohol (Braunschweig, 1915). My personal opinion has been presented in *Papier-Ztg.* 1918, Nos. 34, 35, 43, 44, and 45. The work of W. Kiby (*Chem. Ztg.* 1910, pages 1077, 1091; 1915, pages 212, 261, 284, 350) is less known than that of Hugo Wallin, the meritorious champion of the utilization of waste liquors. The different patents of Ethyl A.-B., of H. B. Landmark, G. Ekstrom, and the work of P. Klason and others need not be mentioned further, because they are well known. It may be stated that this utilization of waste liquors has had a remarkable development, but that it has suffered since 1915 because of the high cost of concentration, due to the increasing price of coal.

Sulphite waste liquors may be used as binding materials and adhesives, either alone or mixed with other substances. This subject is fully discussed by Muller, Austrian Patent 1576 (1888) by A. S. Netti is probably the earliest of these suggestions, though the work of Tilghman (1867) and of Mitscherlich (1874) are mentioned by Muller and by Kierner (*Das Papier*, III, C).

W. Sembritzki has published several notes on cell-pitch (*Papier-Ztg.* 1905, page 872, and others). Among the patents covering this material may be mentioned those of Gewerkschaft Eduard (Swedish, 23,464 of 1906, German 246,289, 25,439, etc.), Trainer (U.S. 969,501, 974,001 of 1910) and others. D. Aufhauser



has published an analysis of this cellpitch (*Z. ang. Chem.*, 1912, page 74), which is of general interest. According to this analysis, the composition of cellpitch is: water, 11.3 per cent; ash, 15 per cent; carbon 36.2 per cent; hydrogen 4.4 per cent; combustible sulphur 3.3 per cent; nitrogen 0.4 per cent; and oxygen 29.3 per cent.

The use of the waste liquors as tanning materials, adhesives and sizing agents is little known in Germany. J. A. DeCew (U.S. patent 1,203,856 of 1916) concentrates the liquor in vacuum with an excess of magnesium oxide and magnesium chloride. A. H. Haefner (U.S. patent 1,231,153 of 1917) uses the fermented sulphite liquor, after distilling off the alcohol, either directly or with the addition of rosin size as a sizing material.

The utilization of sulphite waste liquors as tanning materials is still a debated question. A. Kumpfmüller has published several important contributions upon this subject. The question is fully covered by Müller and by Johnsen and Hovey. Among the most interesting articles are: The discussion of the Leather Chemists Society (*Z. angew. Chem.*, 1914, page 604), F. H. Schulze (*Ledertechn. Rundsch.*, 1914, page 129), W. H. Dickerson (*J. Soc. Chem. Ind.*, 1914, page 1163), A. Gannser (*J. Soc. Chem. Ind.*, 1914, 654), O. Grothe (U.S. Patent 1,087,911), W. E. Harrocks and J. K. Tullis (English Patent 18,322 of 1914), J. Luke (Norwegian Patent 26,138 of 1915), H. H. Hurt (U.S. Patent 1,147,245 of 1915), H. B. Landmark (English Patent 1090 of 1915), F. E. Gross (U.S. Patent 1,154,762 of 1915), F. G. Byron (English Patent 24,196 of 1914), J. Beveridge (*J. Soc. Chem. Ind.*, 1916, page 563) gives results of analysis which indicate that spruce waste liquor containing 41.3 per cent water (sp. gr. 1.290) contains 19.3 per cent tannins, while hemlock liquor with 47.9 per cent water (sp. gr. 1.269) contained 27.1 per cent tannins.

The references to the use of sulphite liquors as fuel are given by Müller, while Johnsen and Hovey give a discussion of the latest work of Strehlenert, together with calculations of the B.T.U. relations. This has been discussed in the earlier part of this paper.

Reference should be made to Müller as regards the experiments on the use of sulphite liquors as fodder, which he discusses the work of König and Becker.

American Patent 1,225,825 of 1917 (E. C. L. Kresel), which is not commonly known, describes the fermentation of the liquors after mixing with stable manure and brewer's yeast. When the fermentation is under way, calcium oxide, rock salt and basic slag or alkaline earth chlorides are added which give a solid mass, suitable as a fertilizer. The work of L. Kerr (*Wochbl. Papierfabr.*, 1915, page 278), A. Stutzer and other German workers on this subject are well known in Germany.

The preparation of dyes and the recovery of sulphur from the waste liquors are discussed by Müller. A. D. J. Kuhn (*Wochbl. Papierfabr.*, 1916, pages 2139, 2179, 2223, 2270) has given a summary of the various methods of recovery. Late patents on this subject include: H. B. Landmark (Norwegian 28,147 of 1917), M. Müller (German 279,374), A. F. Richter and L. Dunbar (U.S. 1,213,414 and 1,213,415), H. O. V. Berstrom (German 290,680 of 1914), and A. D. Fest (U.S. 1,218,638).

A consideration in the profitable recovery of sulphite liquors is the possibility of quickly and econo-

mically concentrating the same. A number of German firms, such as Golzern-Grimma, Sudenburg, Murbe, and others have been engaged on this problem. It would be interesting to obtain a comprehensive report from them which would not praise their individual systems. Further, a description of the manufacture of various products from sulphite liquor, not mentioned herein, would be of great interest.

Editor's Note. — Mention should be made of the fuel and alcohol recovery scheme of R. H. McKee. See *Pulp & Paper*, 1920, p. 715.

### JACOB SIEBERT JOINING NIPIGON.

A farewell dinner was tendered Mr. Jacob Siebert on the night of September 23rd at the New York Athletic Club. He is departing in the near future to assume his duties with the Nipigon Paper Company, at Nipigon, Ont. Mr. Siebert was presented with a very handsome watch, a token of esteem from his New York business friends. Those present were: Jacob Siebert, Alton Fannce, M. Gintzler, S. Goldman, Harry Hughes, John Hoffman, Arthur Sigel, W. H. Donaldson, W. P. Birmingham, Alex G. Gilman, Louis Simon, Frank Fieweger, Joseph Pirie, Carl Becker, J. Ryberg, A. Pael, Fred. Swanson, F. E. Dunaway and E. P. Bullis.

### THE KINGDOM OF WOODPULP.

How many people understand the marvelous transition that has taken place, when they hold a sheet of paper in their hands,—even their daily newspaper?

Just a little while ago, it was a living thing in the forests of the great Northwest. It spread its wide branches, until they met in a vast canopy of brilliant green. Monarchs, each, of the Far Places, each roll of paper fias a tree, embedded in the firm mossy soil and raising its proud head to summer sunshine and the long, bleak winters of the Land of Flying Snow.

Then the sound of the axe was heard in the forest, and down the shadowy slopes echoed the lusty songs of men, as the chips began to fly. Straining horses dragged the prostrate logs over pine-needle paths, until river currents welcomed them, on a still longer voyage of discovery.

Virgin forests are not desecrated when put to man's purpose. It is merely a marvelous transition. Every forest tree is a library of books or a fluttering white stream from the heart of the Fourth Estate. And there is something of inspiration in the sudden knowledge that as one reads, one holds in one's hand, the breath, the romance, the profound majesty and beauty of the forests.

But there is need for a united effort to save these forests from a real peril, a real destruction. Every year, entire tracts of timber land are ravaged by fire. The hunter or the trapper leaves a live coal burning as he passes on; a match is tossed carelessly into dry leaves by the amateur woodsman. There is tragedy in this, a crime against Nature, against Man himself. It is not what we USE that causes paper shortage, it is what we waste, what we wantonly destroy. Let every man be a custodian of our forests, in the things that he says, in the things that he does. Fire in a forest knows no quarter. —"The Marathon Runner."

Don't worry about why a black hen lays a white egg.—Get the egg!

## EXPORTS OF PAPER, WOOD PULP, AND PULPWOOD.

Canadian exports of pulp and paper during August reached a total value of \$18,258,727, compared with \$8,348,179 in August, 1919, an increase of \$9,910,548, or 118 per cent.

Paper exports included 5,594 cwt. of book paper, valued at \$64,293; 1,419,028 cwt. of newsprint, valued at \$7,301,605 and other grades of paper valued at \$1,380,919. There was a falling off in quantity of 2,178 cwt. in book paper although an increase of \$8,106 in value. Newsprint exports showed an increase of 262,677 cwt. in volume and of \$3,160,793 in value.

Large increases, both in volume and value, were recorded in all grades of pulp. Exports of sulphate (kraft) amounted to 267,418 cwt. valued at \$1,284,365, compared with 246,376 cwt., valued at \$829,129, in August last year; bleached sulphite, 191,690 cwt., valued at \$1,598,001, compared with 77,998 cwt., valued at \$400,411; unbleached sulphite, 574,343 cwt., valued at \$3,820,278, compared with 466,757 cwt., valued at \$1,643,646; mechanical pulp, 816,081 cwt., valued at \$2,809,266, compared with 387,435 cwt., valued at \$475,735.

The returns are summarized in the table:

Exports of Canadian Produce—Months of August, 1919 and 1920 and Five Months ending August, 1918, 1919 and 1920.

Paper :		Month		Five Months ending August.		
		1919	1920	1918	1919	1920
Printing Paper :						
Book paper . . . . .	Cwt.	7,772	5,594	.....	23,702	30,345
	\$	56,187	64,293	.....	226,174	324,179
Newsprint paper . . . . .	Cwt.	1,156,351	1,419,028	.....	5,425,567	6,325,216
	\$	4,140,812	7,301,605	.....	19,176,739	29,218,154
Printing paper . . . . .	Cwt.	.....	.....	.....	5,532,495	.....
	\$	.....	.....	.....	16,043,465	.....
Other paper . . . . .	\$	802,259	1,380,919	.....	2,289,122	3,128,754
						5,627,938
Total paper . . . . .	\$	4,999,258	8,746,817	.....	18,332,587	22,531,667
						35,170,271
<b>Wood Pulp :</b>						
Sulphate (Kraft) . . . . .	Cwt.	246,376	267,418	.....	927,533	1,144,961
	\$	829,129	1,284,365	.....	3,022,178	5,489,465
Sulphite, bleached . . . . .	Cwt.	77,998	191,690	.....	412,003	824,198
	\$	400,411	1,598,001	.....	1,998,155	5,890,198
Sulphite, unbleached . . . . .	Cwt.	466,757	574,343	.....	1,522,939	2,759,837
	\$	1,643,646	3,820,278	.....	5,756,479	15,441,735
Chemically prepared . . . . .	Cwt.	.....	.....	.....	3,901,917	.....
	\$	.....	.....	.....	13,319,092	.....
Mechanically ground . . . . .	Cwt.	387,435	816,081	.....	1,733,831	3,024,611
	\$	475,735	2,809,266	.....	2,174,521	8,761,105
Total Wood Pulp . . . . .	Cwt.	1,178,566	1,849,532	.....	5,593,726	4,596,306
	\$	3,348,921	9,511,910	.....	15,493,613	12,883,748
Pulp wood . . . . .	Cord.	97,588	133,464	.....	852,006	425,974
	\$	944,877	1,695,088	.....	8,110,266	4,205,118
						5,756,464
<b>Country of Destination.</b>						
<b>Paper and Manufacturers of :</b>						
To United Kingdom . . . . .	\$	498,493	464,664	413,713	1,487,043	2,012,766
United States . . . . .	\$	3,950,483	6,672,399	15,335,484	18,003,765	27,671,173
Other Countries . . . . .	\$	550,282	1,609,751	2,583,390	3,040,859	5,486,332
<b>Wood Pulp :</b>						
To United Kingdom . . . . .	\$	93,985	1,150,531	7,089	1,086,471	4,586,724
United States . . . . .	\$	2,961,963	7,765,335	14,047,612	10,097,981	28,605,216
Other Countries . . . . .	\$	292,973	596,014	1,438,882	1,699,296	2,390,563
<b>Pulp Wood :</b>						
To United Kingdom . . . . .	\$	.....	.....	.....	.....	.....
United States . . . . .	\$	944,877	1,695,088	8,110,266	4,205,118	5,756,464
Other Countries . . . . .	\$	.....	.....	.....	.....	.....
<b>Total Paper, Pulp Wood and Pulp :</b>						
To United Kingdom . . . . .	\$	592,478	1,615,195	420,802	2,573,514	6,599,490
United States . . . . .	\$	7,857,323	16,132,822	37,493,392	32,306,864	62,032,853
Other Countries . . . . .	\$	843,255	2,205,798	4,022,272	4,740,155	7,876,895
Totals . . . . .	\$	9,293,056	19,953,815	41,936,466	39,620,533	76,509,238

# A Test of Recovery Furnace Lining

Through the kindness of Mr. A. Y. Meeker of the Alberene Stone Company, New York, the Pulp and Paper Magazine is able to present the results of a series of tests carried out by the Electrical Testing Laboratories, New York. The results will be interesting as showing some of the important properties of linings for the recovery furnaces in soda and sulphate pulp mills. The letter and report of the Laboratory are given, and the reader may draw his own conclusions.

## THE LETTER

Alberene Stone Company,  
Gentlemen:—

Enclosed please find our Report No. 30,186 covering the tests of samples of ALBERENE STONE submitted by you.

While the general conclusions to be drawn from the results of these tests are probably evident, it might be well to summarize them in this letter, and also draw your attention to one or two other facts, which may be of assistance to you in obtaining the best working conditions at the mills. The best information we have about the alkali recovery process is that the black ash usually contains tars and pitches, resinous extracts from the wood, sodium sulphate and complex sodium salts, as resinates and other compounds of sodium and organic acids from the wood. This may be reduced alone or mixed with salt cake (consisting largely of sodium sulphate and possibly some sodium nitrate). In the reduction the organic sodium salts are burnt to carbonate and the sodium sulphate reduced to sodium sulphide. If sufficient carbon is present the sodium sulphide may be transposed to sodium carbonate. If too much air is supplied and not sufficient carbon present the sodium sulphide may be oxidized to sulphate. It is advocated by some mill men, we believe, that a large amount of sodium sulphate in the cooking liquor is not very desirable as it is claimed that the sodium sulphide seems to do most of the work in the cooking of the pulp. Also, if too much air is supplied excessive temperatures are reached so that it may be even possible to volatilize portions of the alkali salts. These would of course be condensed and precipitated in the cooler portions of the furnace, but they would apparently have to be re-fused in order to secure complete recovery, so that the time element under these conditions might be undoubtedly extended to say nothing of the excessive action on the ALBERENE STONE, which would also occur at these high temperatures.

The general conclusion possible from these tests, as far as we have completed them, seems to be that it would be desirable to establish pyrometer control on these reduction furnaces and try to maintain medium temperatures (not to exceed about 1300° C., 2372° F.). This would no doubt slow up the speed of recovery but, we believe, would be more than counter-balanced by the length of life of the ALBERENE lining and loss of time necessitated by shutting down the furnace for relining. In the mills where pyrometers are used a record of temperatures can be obtained and by this method a control of the process secured.

The tests which we have made were purely laboratory

tests and of a qualitative nature and it would, therefore, be of great value to have these tests checked by the Plant Superintendent in order that conclusive deductions might be reached.

(Signed) R. F. WEBBER, Chemist.

REPORT RENDERED TO THE ALBERENE STONE  
COMPANY BY THE ELECTRICAL TESTING  
LABORATORIES.

## General.

Specimens of Alberene Stone consisting of about 25 pieces approximately 3 x 4 x 1 inch were submitted for tests. There were four sets of specimens marked A, B, C, and D, each set consisting of six specimens. Instructions were to ascertain (1) the fusion range of the stone, (2) the action of fairly pure alkali salts (such as used in treatment of pulpwood for paper manufacture) at high temperatures, and (3) the approximate maximum temperature at which it would be safe to reduce the "black ash" of the recovery processes of paper manufacture, without unduly attacking the Alberene stone.

## Methods of Tests.

**Test 1.** From one specimen of each set, a cone  $\frac{3}{8}$  inch at the base and  $1\frac{3}{4}$  inches high, was cut. This was heated in an electric furnace of the carbon resistance type until the cone melted and bent over. The temperatures at which the cones started to bend and those at which they had completely bent over were noted and are reported as the "fusion range". Temperatures were measured by means of an optical pyrometer.

**Test 2.** For this test small crucibles were made from the stone. The crucibles were approximately one inch across the top and about  $2\frac{1}{2}$  inches long with a  $\frac{3}{4}$  inch hole in them. Small quantities of sodium carbonate and sodium hydroxide were heated in these crucibles to fusion and any action noted. Where there was no appreciable action the crucible and contents was reheated to fusion and then superheated in steps of approximately 100° until either some action was noted or the fusion range of the stone itself, as found in test 1, had been reached.

**Test 3.** For the test crucibles similar to those used in test 2 were used. A quantity of "black ash" and also of "grey ash" from the evaporated pulp liquors was obtained from the client. Small quantities of each of these materials were heated in the crucible until completely fused, the temperatures at which this occurred noted, and after cooling, any action on the crucibles observed.

To reproduce, somewhat, the conditions which probably obtain when this "black ash" and "grey ash" are reduced in the recovery process at the mill, small quantities of each were heated in the crucibles, and a current of air blown on the heated mass. Tests were made holding the temperature of the furnace constant but varying the amount of air admitted and also raising the temperature of the furnace to points near those which test 2 had shown would cause alkali carbonate and sulphate to attack the stone. Tests were also made varying the volume of air supplied, the reaction and the general effect noted.

## RESULTS OF TESTS.

**Test 1. Fusion Range of Alberene Stone.**

Specimen A	1415 to 1425°C (2579 to 2579°F)
" B	1400 to 1420°C (2552 to 2588°F)
" C	1400 to 1430°C (2552 to 2606°F)
" D	1440 to 1450°C (2624 to 2642°F)
" A-1*	at 1445°C (2633°F) heated and melted and formed a globule of slag.

\*This test made on a bar  $\frac{1}{4}$  inch square, cut from sample A and inserted in the furnace so that it was heated on one end only.

**Test 2. Action of Fused Sodium Hydroxide\***

After fifteen minutes at 325°C (617°F) no evidence of any action could be noted.

**Action of Superheated Fused Sodium Hydroxide.**

No action noted until 1250°C (2282°F) had been reached.

\*The melting point of sodium hydroxide is approximately 320°C (608°F).

**Action of Fused Sodium Carbonate\***

After 15 minutes at 900°C (1652°F) no action could be noted.

**Action of Superheated Sodium Carbonate.**

After 15 minutes at 1000°C (1832°F) no appreciable action.

After 15 minutes at 1100°C (2012°F) no appreciable action.

After 15 minutes at 1200°C (2192°F) slight action. After 15 minutes at 1250°C (2282°F) considerable action.

\*The melting point of sodium carbonate is approximately 850°C (1562°F).

**Note:** A specimen crucible containing fused sodium carbonate after heating to 1200°C (2192°F) is returned with this report.

**Test 3. Lowest temperature at which the black ash could be readily reduced and fused=900°C (1652°F).**

Lowest temperature at which the grey ash could be readily reduced and fused=850°C (1562°F).

Maximum temperature reached, using large excess of air blast, fusing "black ash"=1450°C (2642°F).

**General Effect of Varying Air Blast, but Holding Furnace Temperature Fairly Constant.**

The temperature of the reaction apparently rose almost in proportion to the amount of air supplied. At the higher temperature, namely above 1300°C (2372°F), there was considerable bubbling and spitting and indications that some of the alkalis might be volatilized, and the stone was considerably attacked. The best results apparently were obtained if the air blast was regulated so that the temperatures within the crucibles remained below 1300°C (2372°F).

**General Effect of Varying the Temperature of the Furnace but Keeping the Air Blast Fairly Constant.**

The reaction seemed to proceed best when the furnace temperature was from 1100 to 1250°C (2012 to 2262°F) and under these conditions the fused alkali attacked the stone only moderately.

**Notes on Tests 2 and 3:** The temperatures recorded under these tests are all only approximate and are probably correct to only 25 or 30°C.

When the young men of "The Mill" finally realize that one need be neither tough nor a mollycoddle to be a real man they will become real men. (Applies to your town and mine.)

**LOCKWOOD'S DIRECTORY FOR 1921.**

Bigger, Better and Brighter, words so commonly used these days are descriptive of the 1921 edition of the Lockwood's Directory of the Paper and Allied Trades, which has just been received. The publisher is to be congratulated on the greatly increased size, on the excellent appearance and on the fact that the Directory appears once more on schedule time. The fact that this 46th edition is increased to \$7.00 will not deter anyone in these days from ordering a copy of the book. It is probable that never in the almost half century of the Directory's history has there been such a situation with regard to paper.

Lockwood's Directory is so familiar to the paper trade that a detailed description would be quite superfluous. We find the same sections but each one is larger than before. It is an enormous task to compile the information of such varied character as appears in the Directory, very largely due to the apathy, indifference and procrastination of concerns to whom requests for information are sent. While it is realized that many requests for information are received by pulp and paper, as well as by other companies, it would seem that the management would take sufficient pride in having the company accurately and fully described to furnish the necessary data even at some inconvenience. Each company will find frequent occasion to refer to Lockwood's Directory for information about other companies and it is only fair that they should supply such data regarding themselves as they expect to find regarding others. It is gratifying to note that practically every mill is represented by up-to-date items.

Although no announcement is made in the preface it would naturally be understood that payment of \$7.00 for the book should be made in United States Funds. In order to be sure of having a copy it would be well to send the order immediately as last year's edition was completely sold out in comparatively short time.



FIVE STAGES OF PAPER MAKING

—From "The Mill."

Where will you be five years from now? There are two ways to travel in this life. The way up is hard to climb, the way down is greased.

**BOOK REVIEW.**

**MODERN PULP & PAPER MAKING.**—A practical treatise by G. S. Witham, Sr., published by the Chemical Catalog Company, Inc., No. 1 Madison Ave., New York. Price, \$6.00. U. S. Funds.

Since it became known that Mr. Witham intended to prepare a book on pulp and paper manufacture those interested in this industry have anxiously awaited its appearance. Mr. Witham is widely known and his ability as a pulp and paper maker is highly respected. He is manager of mills for the Union Bag & Paper Corporation and in his 37 years of experience has handled personally practically every type of machine and process. Probably no one man on the continent is better qualified to write such a book as the industry has felt the need of for many years. The only other American works other than a few brief publications issued by paper manufacturers or dealers, of which the most extensive is the *Story of Paper*, issued a few years ago by the Butler Paper Company in Chicago, are *Paper Manufacture* by Davis, 1886, and the *Chemistry of Paper Making* by Griffin & Little, 1891. Neither of these works is of great practical benefit to the paper maker and both of them are out of print anyway. It will thus be seen that the time was quite ripe for such a book as Mr. Witham has produced.

Modern Pulp and Paper Making is a volume of 599 pages. The typography and book making of it is of the high standard set by the Chemical Catalog Company in their well known publication, The Chemical Engineering Catalog. Mr. Witham's book first describes the preparation briefly in a summary of the principal processes and then in a more intimate way the manufacture of pulp from a variety of raw materials and then takes up in more detail, the processes involved in the manufacture of paper. The order of treatment seems a bit strange in some instances, but is evidently necessary to the scheme which the author had in mind. We find a number of interesting chapters on subjects which are of increasing importance, such as Mill Organization, and a collection of data in the form of tables that must have taken a great deal of time to collect and arrange. There is also the chapter on Paper Defects, Their Cause and Cure, which is entitled to special consideration. The author also included several typical specifications for paper machines. There is an excellent chapter on the power plant which includes the distribution of steam and heat in pulp and paper mills. Another chapter which is not often included in such a book is that on General Design including ventilation, lighting, water-supply and power transmission.

There is a decided lack of material on papers made from fibre other than wood and there are occasional spots where the expression could be improved but there will not be any difficulty in understanding the author's meaning. The author's experience is speaking on every page which lends a force to his descriptions that is very assuring.

Everyone familiar at all with the apparatus and processes used in pulp and paper making and for those who want a general description of how paper and pulp are manufactured on this continent, will find this book exceedingly valuable and useful. For the student who wants to know just how a machine works and what it looks like on the inside the illus-

trations are not all that could be desired since they could be made much clearer by the use of sections and by more frequently lettering the particular part referred to the text. The book has the overwhelming advantage in regard to its use in Canada and the United States in that it is typically an American book, written by an American about American conditions. The data is given in feet and inches, U. S. gallons, and dollars and cents. The apparatus illustrated is that which we see in practically every mill; standard apparatus is described as well as a number of the newer designs. Mr. Witham's book deserves a wide circulation and the author deserves the congratulations and gratitude of the industry.

**NEW PRESIDENT OF WHALEN PAPER.**

Whalen Pulp and Paper Mills directors met in Toronto, Monday, when Hon. T. W. McGarry, K.C. was elected president to succeed Sir George Bury, who resigned recently. This was the first full meeting of the board since their election in September.

The following executive committee was appointed: Hon. T. W. McGarry, Toronto; I. W. Killam, Montreal; Alexander Smith, Chicago; James Whalen, Port Arthur; M. J. Haney and W. D. Ross, Toronto; and M. R. Higgins, San Francisco.

The executive have under consideration several names for the position of general manager, but it was stated tonight that appointment will not be finally made until President McGarry makes his recommendations after visiting Vancouver, for which place he leaves in the immediate future. In the meantime, it was intended to push operations vigorously and to name a competent general manager at an early date. Sir George Bury was managing director as well as president, but it is apparent that under the new arrangement the two positions will be separated.

Mr. McGarry was treasurer of Ontario in the Hearst cabinet and recently entered the financial world in Toronto by joining the firm of A. E. Osler and Co.

**COUNTED BY HAND.**

A Canadian manufacturer has made a good move in enlisting the co-operation of customers in an effort to make the difficult task of counting paper as accurate as possible. They have sent out the following letter:

High grade papers are still counted sheet by sheet by hand, and the counters are men and women. Sometimes they will make a mistake, this is only natural, but these mistakes in counting cost money and make dissatisfied customers.

To bring this irregular counting down to a minimum, each counter is now given a number stamp and will stamp same on the end of the reams across the five-hundred sheets: "Counted by Number 3"

Should you at any time have cause to complain to your jobber re irregular count on any of our papers, please quote the counter's number. It will be impossible for us to give you satisfaction, unless you do this, for if we do not find out who the bad counters are we cannot rectify. Your co-operation will oblige.

No matter what position you hold it can best be filled by being able to be relied upon in everything that you do; an appointment made and kept and work done properly are big factors in business.

### BECK TO GO TO SWEDEN.

It was mentioned last week that the executive of the Canadian Pulp and Paper Association had considered the suggestion of Mr. J. A. Bothwell, that a representative to be sent to Norway and Sweden to study and report on forestry conditions there. It was considered a great accomplishment when mill men could be persuaded to sit down together over common problems and to permit inspection of each other's plants. Now we have come to the point where competing nations can co-operate in a friendly way. When Baron Mannerheim and Mr. Storjohann were here last year our papermakers were glad to see them and tried to make their stay pleasant and profitable. When Mr. Bothwell and Mr. Steele went to Scandinavia this summer they were overwhelmed with hospitality. It wasn't just professional courtesy; it was real friendship among craftsmen. Both countries have common problems, and while they compete in a few markets, there is room for all the production of both.

The basis of prosperity in each case is largely the forest. Sweden was one of the first countries to realize this and has instituted successful methods. No doubt the able paper makers there realize that the best way to relieve the pressure on Sweden's forest is to spread it out to other countries. Canada is the natural forest friend and it is not surprising, though



EDWARD BECK,

In charge of publicity for the Canadian Pulp and Paper Association.

it is highly gratifying, that the Swedes should invite Canadians to go over there and study their forestry methods. The Province of Quebec plans to send some young graduates in forestry next year and the Pulp and Paper Association has decided to send Mr. Edward Beck as its representative. This is a fortunate choice.

Mr. Beck has been connected with the association for about two years, in charge of publicity work. Publicity is one of the principal factors in forestry work as its success depends so much on public opinion. Mr. Beck has developed a great interest in the pulp and paper industry and thoroughly realizes the im-

portance of a perpetual forest and the seriousness of the present situation. He is an accomplished journalist and, in company with eager young men who are more versed in the technique, if the visits can be made at the same time, he will have an opportunity to assist greatly the movement that is now well under way to preserve the productiveness of the Canadian forest.

### PRICE BROTHERS & CO. REORGANIZING.

Definite announcement was made Monday respecting the long-expected capital stock reorganization of Price Brothers and Company, Limited, established a new high record at 385, for any security on the Stock Exchange, Monday in Montreal.

The news came in the form of a circular addressed to shareholders of the enterprise stating that a new company, bearing the same name-style as the old concern, had been created during the present year to take over the assets and business of the present company as a going concern. Although no specific details were contained in the circular as to what shareholders are to receive under the reorganization, the fact that the new company is to turn over as one of the considerations of the transfer 426,710 shares of stock, or precisely five times that of the old outstanding capital, indicates that the split-up is to be on the basis of five shares of new stock for each one of old.

The new stock is of a nominal par value of \$100 per share and not of the no-par-value class issued in recent months by other paper enterprises. Shareholders are asked to pass upon the recommendation of the directors at a special meeting, to be held at Quebec on Monday, October 25, next. If the proposal meets with the approval of the shareholders, the transfer is to become effective from November 1, next.

The circular, which is signed by the president, Sir William Price, after giving notice of the special meeting, states that shareholders are asked:

"(1) To take action in approval or disapproval of the proposed sale, conveyance, transfer and delivery to Price Brothers and Company, Limited, a corporation created by letters patent of the province of Quebec, issued in 1920, of all the undertakings and assets, moveable and immoveable, corporeal and incorporeal, for the following consideration:

"(a) 426,710 shares of \$100 each, fully paid up, of the company's capital stock.

"(b) The assumption by the company purchaser of the outstanding bonded debt and other liabilities of the company outstanding as on November 1, 1920.

"(c) The undertaking by the said company purchaser to carry out all contracts, agreements and obligations of the company existing on the said date.

"(2) To consider and approve or disapprove a resolution of the board of directors relating thereto.

"(3) To consider and determine such other and further matters in any way incidental to or connected with the foregoing as may be brought before the said meeting."

In a further communication, Sir William Price states: "In view of the conditions which prevail, I have no hesitation in recommending that the shareholders avail themselves of this offer of purchase.

The capital stock of Price Bros. presently outstanding is comprised of 85,342 shares of a par value of \$8,534,200 with 5 per cent bonds, as at the end of February last, totalling 5,172,098.

## REPORT OF THE UNITED STATES TARIFF COMMISSION ON CANADIAN RECIPROCIITY.

The Pulp and Paper Magazine of Canada, acknowledges with thanks, the following communication from the United States Tariff Commission.

A high degree of timely interest attached to a report that has just been issued by the United States Tariff Commission. The report deals with Canadian Reciprocity, a subject of much excited discussion just ten years ago.

There is strong likelihood that our trade relations with Canada will once more attract serious attention at an early date. The movement for preferential treatment of Imperial trade by all the dependencies of Great Britain, and the recent agreement between Canada and the West Indies providing for reciprocal concessions that the United States will not enjoy, may divert from this country much trade that nature seems to have intended should flow in this direction. The Dominion Government is now making preparation for a general revision of the tariff, and there are indications that this country within twelve months will be likely also to revise its commercial relations. In Canada, the official platforms of the Liberal Party and of the Farmer-Labor Party demand a renewal of reciprocity negotiations with this country. In the meantime, our former offer of reciprocity to Canada still stands upon our statute books, although a bill for its repeal passed the House of Representatives last year.

The report of the Tariff Commission is the first careful study of the effect on commerce that the measure would have had if the Canadians had accepted it.

The Commission outlines at some length the political situation in the United States and Canada at the time of the passage of the act by Congress and notes what appears to be the present feeling towards reciprocity in the Dominion. In the United States reciprocity was in accord with a movement against high duties which was felt in both parties. The Republicans who were opposed to the tariff of 1909 might have been expected to follow President Taft in his support of the measure. These so-called "insurgents" came, however, largely from agricultural constituencies, and because the chief duties removed were on agricultural products, many of them voted against the bill as a discrimination against the farmer. Both the "insurgent" and the "regular" Republicans showed a majority against the bill; but sufficient Democratic votes were cast for it to effect its passage. Reasons for the defeat of the measure in Canada, in addition to the opposition of the interests directly affected, were numerous. Among them were resentment arising from the earlier attitude of the United States towards reciprocity, the strength of the idea of Imperial unity and the fear, however, ill-founded, that the agreement was prompted by political motives, and would lead to an ever growing dependence of Canada on the United States. Present Canadian support of reciprocity comes from the Liberal Party, which was defeated on this issue in 1911, and the Farmer-Labor Party, which has shown political strength in the Dominion during the past year.

The report contains an extended statistical study of the effect which the agreement would have had, if adopted (1) at the time it was drawn up, and (2) at present. \* \* \* At the first date the value of imports

into the United States from Canada which would have been put on the free list or reduced in duty, was \$43,000,000; of these in the opposite direction, \$33,500,000. The proportion of trade affected would have been, however, very different for the two countries. Of imports into the United States from Canada, 45 per cent would have been changed, 5.6 of these going on the free list, the remaining sixth being reduced in duty; of imports into Canada from the United States, 15 per cent would have been changed, 1.3 of these being made free, 2.3 reduced in duty. In the second comparison, trade figures for 1918 are used as indicative of the present situation. The changes which the adoption of the treaty would make under the rates now in force in each of the countries differ from those just given, most markedly so in the case of imports into the United States. For Canada, the rates taken are those in force, since May 19, 1920, not considering the excise taxes laid by the Dominion Parliament and enforceable from that date, falling upon imported goods as well as those made in the Dominion. In 1918 imports into the United States from Canada which would have been affected, amounted to \$31,000,000; those in the opposite direction, to \$126,000,000. The proportion of trade affected is not so markedly different as before; of imports into the United States from Canada, 7.2 per cent would have been affected, 23.24 of these being made free, the remaining twenty fourth reduced in duty; of imports into Canada from the United States, 16 per cent would be affected, 1<sub>4</sub> of these going on the free list, the remaining 3<sub>4</sub> being reduced in duty. \* \* \* The United States, the Commission concludes, would today be granting less of a concession to Canada through the adoption of the agreement now than at the time proposed, Canada a somewhat greater one.

The reason for the differences pointed out above between the effect of the agreement today and when proposed have been due, to a great extent, to the fact that the tariff of the United States has undergone a thorough revision, while the same tariff is in force in Canada as at the earlier date. Many changes, it is true, have been made, but these are slight as compared with the differences between the tariff acts of 1909 and 1913. A second cause for the difference lies in the large increase in the value of the trade between the two countries since the outbreak of the war in Europe, an increase largely attributable to the rise in prices, although to some extent due to an increase in the commodities exchanged by the two countries.

\* \* \* The articles which would be especially affected by the present adoption of the proposed rates are flaxseed, oats, hay, and barley. The last of these is not of great importance. The bulk of the imports of hay into the United States from Canada go to the northeastern sections of the country, since the transportation costs for such a bulky commodity are high. As to oats, it may be noted that a portion of Canada's production is of fine grade, suitable especially for the manufacture of rolled oats. Although she produces only 1-3 as much as the United States, her annual exports are greater. With the present duty of 6c per bushel, which is more than the pre-war freights from Montreal to England, the bulk of the exports go to Great Britain, except in years of crop shortage in the United States. The removal of the duty, as contemplated in the reciprocity agreement, would, the Commission concludes, result in increased imports and in increased returns to the Canadian farmers, ad-

though not greatly affecting general oat prices in the United States.

Flaxseed, which, from the point of view of the value of the imports into the United States, is the most important of those articles now dutiable to be made free by the reciprocity agreement, presents unique features. It is essentially a frontier crop, the cultivation of which is now being extended rapidly in the Prairie Provinces of the Dominion. It is not profitable when raised continuously on the same ground, is not a "weed fighter", and for these and other reasons is not a popular crop with the farmer. The present United States duty is 20 cents per pound, equivalent to 6 1-2 per cent ad valorem on the 1918 imports. With this duty, one-half of the United States requirements are imported. Canada's surplus has not been sufficient to meet the growing American shortage, and Argentina has become the chief source of foreign supply. The most marked effect which would result from the removal of the duty, the Commission concludes, would be an increase in the prices the Canadian grower would receive for his flaxseed rather than a reduction in the American price. \* \* \* This is interesting as affecting the possible future production of flax straw available for proper making.—Ed.

Wheat and potatoes, important articles of trade between the two countries, are now admitted free into the two countries.

Note.—Copies of the report may be obtained for **twenty (20) cents** each from the Superintendent of Documents, Government Printing Office, Washington, D.C.

### PROTECTING COAL

One of the most difficult problems that confronts a manager of the modern plant, is to protect his coal pile. The enemy is within. When soft coal is stored there is almost always an increase in temperature, because of slow oxidation. If the temperature continues to increase because of the gradually accumulating quantity of heat in the pile, there comes a point where the coal takes fire, and we have a case of spontaneous combustion. It is important that conditions inside the pile be kept track of. Some companies take great care in storing their supplies of fuel, and some of them install means for ventilating their coal pile, so as to keep down the internal temperature. A thermometer has recently been devised especially for determining the temperature at normal depths in a coal pile, so that indications can be recorded regularly and frequently of actual conditions. It is thus possible to locate incipient trouble and take proper means for meeting the difficulty. The Thornley Coalometer can be inserted in the pile, and will immediately register on 3 dials the temperature at 5, 10, and 15 ft. below the surface. F. C. Thornley & Co, 31 West 11st Street, New York, have issued an interesting pamphlet discussing this subject.

The Valleyfield Coated Paper Company is adding to the plant at Valleyfield, Que., by extending their present building about 60 feet beyond the present finishing room. This will be used for storing and shipping the finished stock and to accommodate their offices and their box shop. Manager Colbert has just returned from a vacation trip to Indiana.

### KIPAWA PLANT GROWING RAPIDLY

Mr. Blaik, of the Financial Post, was a member of the party that went to the Kipawa sulphite mill at Temiskaming, Ont., last week, as guest of the Riordon Company. He writes to his paper:

Preparations are under way for increasing the output of bleached sulphite plant of the Riordon Company, Limited, at the Kipawa plant from 150 tons daily to 200 this fall and to 300 tons a day by next summer. This announcement was made in the course of an inspection trip of the new mill at Kipawa on Lake Temiskaming this week by representatives of some of the larger paper mills in the United States as well as Canada. This increased production will make a total for the far northern mill of over 90,000 tons a year, and bring the total output of the three mills of the company up from 100,000 tons a year to 190,000, or adding the 29,000 tons of the Ticonderoga plant in New York State, to a grand total of about 220,000 tons a year, or some 700 tons a day. This would place Spanish River with its newsprint and surplus pulp and Riordon with its chief output of bleached pulp as close contenders for the premier position in respect to production in Canada.

In connection with the extension of the Kipawa mill the digesters will be increased from five to fifteen, and the boiler capacity will be doubled. For the time being the company will be able to get along with its present amount of power, 7,000 h.p., if the bleaching plant is given up temporarily, as the electrolytic process used consumes enormous quantities of electric power. It will not be long, however, before the generation of power at the Kipawa mill will run to 15,000 h.p., out of a capacity of developed and undeveloped 30,000 to 40,000 h.p.

So far the Riordon Company has not been called on to utilize the new Edwards and Gilmour and Hughson limits for any of their mills, but it is understood that the earnings on the lumber operations of the two properties will be sufficient to take care of all the charges in connection with the issues of the new company, that is the bonds and preferred stock, leaving the earnings from the Riordon mills and Ticonderoga as available for further development purposes and for the common stock issues. The recent issue of 8 per cent preferred stock will be sufficient to cover the cost of the extension of the output to 300 tons capacity a day, where it is likely to be left until conditions of the general markets of the world, as well as the pulp and paper field, make it advisable to launch out the final extension plan that would bring the production, or at least the "capacity," of the Kipawa plant up to 500 tons a day. Perhaps about this time, more probably before, steps will be taken to develop a new mill in proximity to the Gatineau limits, enabling the spruce and balsam to be utilized as well as the lumber. The limits at Kipawa, some 2,000 square miles, north of Lake Temiskaming, that are owned outright by the company, and some 20,000 square miles back of the mill property, as yet hardly touched, but on which cutting rights could be secured, will be ample for the Kipawa mill.

The MacKinnon Steel Co., Limited, of Sherbrooke, Que., have received contract for Coal Trestle and Steam Pipe Bridge from the Brompton Pulp & Paper Co. Limited, East Angus, Que.



**PULP AND PAPER UNIONS MET IN OTTAWA.**

A gathering of over one hundred and thirty delegates, representing over thirty thousand pulp and paper mill workers in American and Canadian pulp and paper mills, and which may by their revisions to their constitution, later on have a decidedly important bearing in the relation of the employee to the paper mill employers, took place at Ottawa last week.

The occasion was the ninth bi-annual convention of the International Brotherhood of Pulp, Sulphite, and Paper Mill Workers of the United States and Canada. It was the first convention of its kind to be held in Canada, during the eighteen years of the existence of the Brotherhood. The last convention was held at Albany, N.Y., in 1918. In addition to over one hundred and thirty male delegates there were also a goodly sprinkling of the fair sex, representing affiliated locals from the American mills and paper bag factories. The Convention got under way Tuesday morning, when important addresses, both of welcome and of an advisory nature, were made by prominent speakers. The speakers included Controller John Cameron, of Ottawa, and Mr. Tom Moore, president of the Dominion Trades and Labor Congress. The addresses and remarks of the speech makers on Tuesday morning while not of direct bearing to the manufacturers, nevertheless carried with them a message of much importance, that will be well to be kept in mind by the employers of pulp and paper mill labor. In short the "other fellows" side of the question was shown.

Throughout the newsprint inquiry and ever since the Dominion Government first attempted to regulate the price of newsprint paper, the position, cost and place of labor, in relation to the production of paper has been very much heard of. Consequently the holding of the ninth bi-annual convention of the workers of Ottawa, naturally had its importance to the industry.

For instance it was mentioned by Mr. Frank Lafortune, president of the Ottawa Trades and Labor Council, in relation to the capitalization of paper mills, that capital had become international. So, he maintained must labor become international if it were to survive. He predicted that so long as the International Trade Union Movement survived as the governing body of labor in America, that the Canadian and American paper mill workers would continue in their brotherhood and would never be divided.

The President of the Dominion Trades and Labor Congress, Tom Moore, in referring to the capital of America's pulp and paper industry, said: "The paper industry today has the greatest and best organization and regulation of capital, that the world has ever known."

The principles of International Trade Unionism were fully touched upon, and the attempts of the members of the One Big Union to disrupt its progress were also referred to. The attempts of the O. B. U. to disrupt and destroy organized labor had in some communities, president Moore said, set the wheels of progress back eight or nine years.

Touching upon the outlook for the paper mill worker in America and especially in Canada, president Moore pointed out that while the growth of the organizations embraced in the Dominion Trades Congress, had been rapid that the Congress, after thirty five years of existence, was only in its infancy.

Capital's interests and the Manufacturers' Association, were charged with fostering a nation wide attempt for an open shop in relation to paper mills. The International Trade Union Movement was styled by Controller John Cameron, as the most sound and constructive body in the world today.

Mr. J. T. Carey, president of the International Brotherhood of Paper Makers, also addressed the meeting Tuesday.

**COULD GET MORE FOR PULP THAN FINISHED PAPER.**

A despatch from New York to the Montreal Star, reads:

Manufacturers of paper, particularly of newsprint, are in exceptionally good position in regard to inventories. While many of the industrial companies are now confronted with large inventories which will necessarily have to be marked down this year, this will not be necessary among the paper companies.

On the contrary, wood and wood pulp, which are the chief items in their inventories, have enhanced in price over last year's quotations to an alarming degree and give every indication of going higher still. Wood pulp is now selling at \$140 a ton, the highest price in the history of the industry. There is a scarcity of this commodity and many of the paper companies, if they wished, could dispose of their stocks at prices representing considerable advances over what they paid for them.

Wood for paper making purposes is now selling at approximately \$34 a cord against \$21 a little more than a year ago. It continues scarce and higher prices this year or early in 1921 would not be surprising. This is explained in part by the fact that last year's cutting was below normal. Paper companies usually cut their wood at least a year in advance, so that they are now using timber which was cut last year.

Timber cutting operations are being restricted this year to a large extent by the inability to secure adequate labor. There is a growing disposition on the part of the men to seek less arduous forms of employment and despite exceptionally high wages it is difficult to obtain a sufficient force.

It would appear from first glance at the balance sheets of some of the large paper companies that they are carrying exceptional large inventories for the amount of business transacted in a year. This is not so. The large stocks of raw materials carried as inventories have increased in price more than 100 per cent in the last four years. Only a negligible portion of inventories of the paper companies is represented by finished stocks on hand. This is explained by the fact that the pressing demand for paper practically clears out stocks as soon as they are manufactured.

The International Paper Company, the largest American producer, at the close of 1919, showed inventories of \$23,713,388 against \$21,397,041 in 1918, and \$12,762,692 in 1917. The increase is accounted for in large measure by increased wood prices. The company could today dispose of its raw materials at higher prices than it paid for them. As an instance, the company is selling the finished product, newsprint, at \$130 a ton. The ton of paper is practically all wood pulp together with added chemicals, and the pulp is selling at \$140 a ton, or \$10 over the selling price of the paper.

# PULP AND PAPER NEWS

Mr. W. F. V. Atkinson, formerly with the Spanish River forces at Sault St. Marie, and who recently moved to Toronto, has accepted an appointment as forest and hydraulic engineer for the Dryden Pulp & Paper Co., Ltd., of Dryden, Ont. Mr. Atkinson will have charge of all forestry, stream-flow and water-power work for the company, which owns 1,157 square miles of timber limits adjacent to Wabigoon and Eagle Lakes, and has an interest in 2,000 square miles of additional limits in the same district. The company is now developing 2,000 h. p. at Dryden and owns a water-power at Eagle Lake which is partially developed. Construction work is now in progress for the completion of this development to 5,000 h. p. in charge of B. S. McKenzie of Winnipeg as consulting and construction engineer. The company is also erecting a new 40-ton ground-wood mill.

A new bond issue for \$1,000,000 will be offered by the Provincial Paper Mills, Limited, as part of a authorized issue of \$3,000,000. The purpose of the money is new construction, additions and betterment to the plant and to refund outstanding bonds upon the plant of the Port Arthur Pulp and Paper Company, recently acquired, amounting to \$200,000, and a balance of the mortgage on the Georgetown property amounting to \$60,000.

Mr. Norman Phelps, for over 30 years the editor, business manager and proprietor of the North Bay Times has disposed of his newspaper and job printing plants owing to poor health, the new proprietors being T. Ruebottom and George H. Wilson, late of the Sudbury Star staff.

Mr. A. P. Costigane, Secretary of the Ontario Pulp and Paper Makers' Safety Association, has returned from Milwaukee, where he attended the annual convention of the National Safety Council. Mr. Costigane describes the meeting as one of very great interest, benefit and enthusiasm and one that will do much towards stimulating interest in the great safety movement. Hundreds of delegates were present from all over the continent while the Old Land was also represented at the gathering.

Reports from Northern Ontario are to the effect that while curtailment of work in certain of the industrial plants in southern centres has not yet resulted in influencing the labor supply at the gold mines, the large amount of construction work at the several large pulp mills throughout the north appears to be absorbing the larger percentage of incoming labor, and these concerns are able to outbid the gold mines in point of wages paid.

A big deal in Harbor Commission property in Toronto has just been completed by which the Dominion Envelope and Carton Company of Toronto takes possession of seven acres of land not far from the eastern gap. It is the intention of the company in the spring to commence the erection of a factory 300 x 500 feet and a unique feature is that it will be all of one story. At the present time the company has two five story struc-

tures on Duchess Street and in the new plant over 350 hands will be employed.

The death took place this week of an old member of the Toronto Globe staff in the person of Mr. Archibald Fleming at the age of 71 years. He also served with several newspapers in the United States until ill health forced him to give up work. For the past five years he was a patient at the Hospital for Incurables.

Mr. W. Nelson Wilkinson, a popular Toronto newspaperman, and president of the Canadian Newspaper Service, Limited, is assuming the Managing Editorship of the Ontario Newspaper Corporation, Limited, the new owners of the Hamilton Times. The head office of the Canadian Newspaper Service will be moved from Toronto to Hamilton where Mr. Wilkinson has purchased the business of the Canadian Readyprint Company and the Hamilton Newspaper Union list of weekly newspapers.

Before the adjournment of the convention and following conferences between jobbers and manufacturers the gathering passed a resolution subscribing to the principle that the best method of distribution of paper was through the wholesale merchants and the manufacturers will be asked to co-operate to this end.

A second morning paper for Hamilton, Ont., is now a possibility. It is stated that the Hamilton Spectator has applied for a franchise and the Hamilton Times, under John Inurie, is about to publish a morning edition.

It is reported in Winnipeg that one of the most important newspaper deals in recent years is practically consummated. According to the report, Sir Clifford Sifton, who owns the Winnipeg Free Press, and interests associated with him have acquired from Mr. W. F. Herman the Saskatoon Star and the Saskatoon Phoenix. Mr. Herman, who, over a year ago, established the Border Cities Star in Windsor, Ont. and has recently established there the Border Cities Sun as a morning paper, has, it is reported, acquired options on newspaper properties in Hamilton and Toronto. If the present deal goes through, Mr. Herman will hereafter concentrate his activities in Ontario. Until recently he was the owner of the Regina Post but a few weeks ago disposed of his interests in that paper, acquiring at the same time the Saskatoon Phoenix. He has been for many years proprietor and publisher of the Saskatoon Star.

Reports from Port Arthur show that the work of constructing the plant of the Kaministiquia Pulp and Paper Company is progressing satisfactorily and it is expected to be ready for operation by Nov. 1. The wood-room is almost ready and the construction of the mill building is proceeding smoothly with the installation of the machinery keeping pace. Word has also been received that the plant of the Western Canada Pulp & Paper Company, near Vancouver, is operating at full capacity with an output of 40 tons of sulphate pulp daily.

The death of Ludwig K. Cameron, for many years King's Printer for the Province of Ontario, occurred on October 1 at Santa Monica, California, where he had gone for his health about six years ago. Mr. Cameron was 67 years of age and was born in Stouffville, Ontario. Some 38 years ago, Mr. Cameron went West and founded the "Nor' West Farmer" at Winnipeg. After remaining there for several years Mr. Cameron came East to The London Advertiser, of which paper his brothers had control. At that time one brother, John Cameron, was editor of The Globe. Mr. Cameron remained with The Advertiser only a short time and was appointed King's Printer. This was about 30 years ago.

"No wonder there is a feeling among the people in the northern country that some step towards secession should be taken," remarked J. J. Carrick, ex-M.P. in Toronto, this week. "Due to the timber investigation and the inaction of the Department of Lands, Forests and Mines, no permits or timber leases are being issued in Northern Ontario, and consequently no men are going into the woods. About this time of the year there are usually 4,000 or 5,000 men in the bush taking out ties and pulpwood and carrying on other operations. At present, however, practically everything is at a standstill."

Owing to the growth of their business the Wilkinson Paper Co. is about to take over a couple of extra floors at their present premises on Bay Street, Toronto.

Mr. William Scott and his son George Scott, who are large makers of twine in Stockport, England, were guests this week of Mr. Charles V. Syrett, of the Victoria Paper and Twine Co., Limited, Toronto.

**INTERNATIONAL PLANS ANOTHER HUGE MILL**

The developments which the International Paper Co., of New York, will make in Canada, will be far greater than had been anticipated. On his return from the trip to the new Riordon mill at Kipawa, P. T. Dodge, president of the International Paper Company, stated that the company was planning a new mill in addition to the one that is under construction at Three Rivers. No announcement has been made yet as to where this new mill be located. The company owns several timber limits in addition to the ones up the St. Maurice River, but it is concluded that it may be at Grand Falls, N.B., where the company has timber limits and water power available or perhaps somewhere in Quebec, according to the Financial Post. This mill is likely also to represent an investment of at least \$5,000,000 and will duplicate, to a great extent, the mill now being built at Three Rivers. Indeed it would not be surprising if eventually this paper company, which has the largest output of any newsprint mills in the world, should decide to construct several other mills in Canada.

The International Paper Company, a number of years ago, secured leases of extensive pulpwood limits belonging to the Crown in Quebec Province, but have been unable to export the pulpwood to feed their mills in New York State. One of the latest results of this scarcity has been that the large mill at Niagara Falls, N.Y., with a capacity of 160 tons has been forced to change over from newsprint to other grades of paper. The production of this mill alone would be sufficient to cover nearly half the consumption of all the newspapers in Canada.

**CHEMICALS AT NEW YORK, OCT. 6th.**

	Units	Carloads	Less th. U.S.
Acetic acid 28%	ewt	3.50- 3.75	4.00- 4.50
Acetic acid, glacial 99%	ewt	14.00-16.00	16.25-.....
Hydrochloric acid (nominal)	ewt	2.00- 2.50	2.75- 3.00
Muriatic acid, See Hydroch.			
Sulphuric acid 60 — Tank cars	Ton	12.00-16.00	.....
Sulphuric acid 66 — Tank cars	Ton	16.00-17.00	.....
Sulphuric acid 66 — Drums	Ton	26.00-28.00	.....
Alcohol, denatured 190 prf.	Gal. (U.S.)	.....	1.05- 1.10
Alcohol, wd. See "Methanol"			
Alum (Aluminum Sulphate, Iron free)	Lb.	.06	.....
Bleaching Powder	ewt	7.25- 7.50	8.00- 8.50
Chlorine gas, liquid (100 lb. cylinders)	Lb.	.09-.09½	.10-.10½
Lead nitrate crystals	Lb.	.....	.90-1.00
Methanol, Wood alcohol 95%	Gal. (U.S.)	.....	3.25- 3.30
Salt cake	Ton	.....	48.00-50.00
Soda Ash	100 lbs.	.....	3.25- 3.50
Sodium Silicate 40%	Lb.	.011½-.013½	.02-.02½
Sulphur-oxide	Ton	16.00-20.00	.....

New York, Chicago and St. Louis report quiet markets.  
Salt cake is firm.  
Very little bleaching powder offered.  
In Naval stores there is great inactivity.  
Rosin less than car lots \$13.70 to \$13.80 per Cwt.

**CHEMICAL ENGINEERING CATALOG READY**

The 1920 issue of the Chemical Engineering Catalog is now ready for delivery.

Owing to the tremendous increase in the cost of paper, printing and other essentials connected with this issue, the publishers are compelled to make a nominal charge for the use of the Catalog this year. This charge, Foreign, is \$3.50, including the cost of delivery.

As the size of this edition is limited, copies will be sent only to those who apply for them. A letter which is being sent to those who received copies last year says: "You will be asked soon to ship the copy of the 1919 book you now hold to your nearest scientific school. We cannot give to the students in the institutions offering courses in chemistry the "current" edition, but we have promised several thousand copies of the 1919 Catalog to such institutions this Fall."

We know from experience the value of these catalogs to students of Industrial Chemistry and trust that all will co-operate promptly in sending last year's catalog to the school indicated.

**ON SHIPPING ACIDS.**

Viele, Blackwell & Buck, exporters, etc., 49 Wall St., New York, have issued a very interesting bulletin, No. 11, on acids. It includes the names of 41 commercial acids in four languages, with formula, chemical name, principal properties and uses and gives information as to manner of packing, shipping regulations and classification as regards danger.



# The Markets

## CANADIAN PAPER TRADE CONDITIONS.

Toronto, Ont., S.—Whether prices in the pulp and paper line will come down sooner or later is causing some discussion in the industry and, while there have been no recessions so far, the question arises what does the future hold in store? Values are well maintained at the present time but miscellaneous orders are falling off and there is the general wave of price reduction, now sweeping the country which has to be reckoned with. The conviction that quotations in practically all commodities have reached their apex is generally recognized, and the query forces itself to the front, will pulp and paper escape?

This is not saying or suggesting, that present rates are too high in view of the demand and the high cost of production, wages, shortage of raw materials, coal, transportation and other practically fixed charges. All these have to be thrown into the discard by the force of events. Speaking to the "Pulp and Paper Magazine" this week, a leading manufacturer of book paper said that they had orders to carry them many weeks ahead, but there was no gainsaying the fact that the law of supply and demand ruled, and when demand fell below a certain point, the cost of manufacture "cut no ice". It was all right to remark that prices in any line could not come down but the market would determine that,—and shatter many theories, which hold sway under normal conditions.

Recent despatches from New York have stated that Canada is about to face a new competitor in the newsprint market of the United States in the shape of German importations but the invasion is not likely to be of large enough proportions to cause much anxiety, in view of the ever increasing call for newsprint and the fact that consumption is increasing more rapidly than production. In the book and writing paper line it was stated by one of the speakers at the Canadian Paper Trade Association meeting, held last week in Toronto, that English makers of fine paper were now beginning to canvass the trade in Canada for business and had made some attractive offers. Not since the outbreak of the war had this been the case, and what effect English competition will have on the book and writing trade of the Dominion is a subject of speculative interest.

Book paper manufacturers are faced all the while with increasing cost of pulp. One firm stated this week that they had been offered as a "special inducement" a large consignment of the bleached commodity at twelve cents a pound whereas the latest previous proposition was eleven cents, at the mill. The recent increase in freight rates, shortage of coal and other factors have also to be considered. The groundwood pulp situation is also causing anxiety and supplies in sufficient quantity are difficult to obtain. As high as \$140 was paid, at the mill, recently for spot delivery.

Deliveries on other lines of paper are a little more satisfactory than they have been for some time although kraft shipments are away in arrears. Some wholesalers have been "pyramiding" their orders of late in order to secure more prompt shipments. One

dealer reports that the system has worked out to better advantage than placing one big order and then sitting down and waiting for it to be filled. Printing establishments are getting busier and manufacturing stations are rushed with trade for the holiday period which is now only a couple of months off. They are still finding it difficult to secure sufficient stock in many lines. Envelope manufacturers are also very busy.

Toilet and tissue paper mills are catching up with production and prices remain unchanged. They have business enough ahead for several weeks but the rapid advances in price, which prevailed some weeks ago, are not in evidence now.

Box board prices remain the same and will continue to do so for the remainder of the month. Paper box factories are not now rushed to the same extent that they were weeks ago and there is not the persistent clamor for stock. This state of affairs is welcomed by the mills. The plant at Frankford of the Canada Box Board Co. will be closed down for a couple of weeks to undergo repairs and additions in the boiler room. The new groundwood building of the company is now completed and the machinery is on hand ready for installation.

In regard to newsprint paper, certain increases went into effect at the beginning of the month. The former price for sheet news varied from \$120 to \$140 and now the figure runs from \$140 up to as high as \$156 in some cases. For roll news the weekly papers, which use newsprint in this shape, are now paying as high as \$130 whereas the former figure was from \$96 to \$120. It is reported that, at least, two new daily morning papers will be launched in Ontario during the next few weeks and this will increase the demand while the dailies now in the field never used as much newsprint as they are doing at the present time by reason of the great amount of advertising being done. Merchants, who never used newspaper space before, are employing printers' ink in order to reduce the stocks of goods on hand and make known that they are joining in the universal wave of price cutting.

One question of interest to the trade in general is the price of pulpwood. Many lumbermen are cutting their small logs up into pulpwood and others in the east are establishing rossing plants. Scarcely a week goes by but that some new company does not embark in the pulpwood field and many of the big paper plants are offering exceptionally high wages to induce men to go to the bush. Lumbermen have been feeling this competition keenly, so far as the labor market is concerned, as they say that they cannot pay the scale offered by the pulp companies, owing to the fact the lumber business generally is in a quiet state at present, due to the falling off in the United States market and the decline in building operations. Pulp and paper producers are in a far different position as there is an abnormal demand for their output at the highest figure ever known and the requisitions for tonnage must be met as far as it is humanly possible to do so. Naturally labor in the forest flocks to the heaviest bidders.



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INQUIRIES SOLICITED.

**NEW YORK MARKETS.**

New York, October 9 (Special Correspondence)—

Demand for paper of practically every kind has continued to recede this week, and the market is in a quieter state than for a long time. Consumers of paper, like those using various other manufactured commodities, are pursuing a policy of holding off in buying unless immediately in need of supplies. Publishers and printers who, a few weeks ago, were urgently seeking paper and who were apparently willing to pay any prices to secure supplies, today are doing very little purchasing, most of them getting along as best they can on shipments being received on contract without resorting to fresh buying. One consolation for the paper trade is that virtually every commodity is experiencing the same market conditions. The people of the United States, evidently being firmly of the belief that the inevitable price readjustment is well under way and that they will be able to buy substantially cheaper figures in the near future, are for the present doing as little buying or any and all articles as their actual requirements will permit. This general lack of buying is at the bottom of all the dullness affecting business in this country, and there is little probability of improvement in trading conditions until commodity prices have touched bottom, at least temporarily.

Paper manufacturers as a class are in a more favorable position than probably any other set of manufacturers in the country. Most paper mills have back orders on hand taking the great bulk of their output for several months hence, so that a large majority of plants are running at close to capacity and are shipping out their product about as quickly as it is available. Neither have paper prices been materially affected thus far. With demand at a low ebb, values naturally are characterized by an easy undertone, yet actual prices remain on fairly steady levels. Mills have received quite a few cancellations, of course, and there have been cases where certain manufacturers or dealers have cut prices to effect sales, but generally speaking, the price tone of the market is favorable; furthermore, it seems likely to continue so. Sellers of paper realize that lowering of quotations would bring them little results in the way of stimulating business. On the contrary, the cause for the prevailing lack of demand is nothing else than the downward trend of values, and the cutting of prices on paper now would merely prompt buyers to hold off a bit more.

The spot basis on newsprint is a bit lower. The influx of foreign print paper supplies from Scandinavia and Germany, coupled with the reluctance of publishers to buy in the open market, make for increased offerings, and sales have been recorded down to 10 cents a pound for news in standard rolls. In fact, there have been rumors of transactions at as low as 9.75 cents, and the probabilities are some scattering lots have been sold this low. Despite the refusal of consumers to buy spot tonnages, proof is not wanting that most publishers are short on needed supplies. Newspapers in New York and other cities are leaving out columns upon columns of advertising almost every day, and the fact that they are limiting the size of their issues to a certain number of pages indicates they are confining their consumption to the paper they are getting on contract.

Book papers rule notably firm and are in a favorable market position. Reports are heard of a sagging of prices but buyers admit being unable to acquire supplies at cheaper rates, and mills say they are shipping their output to contract customers without having much, if any, surplus left. Coarse papers are in quiet demand but are holding up in price excepting in some few instances. Tissues can be bought a little cheaper, and kraft wrappings are not as firmly quoted as they were. Fine papers are steady to firm, and although the bulk of demand is for the low-priced grades, the market shows enough activity to give it a fairly lively complexion.

Slight reductions in board prices are reported. Old waste papers have fallen off in price considerably which apparently enables board manufacturers to sell their product for a little less. News board is quoted at \$110 per ton at mills and plain chip board at \$100. Demand in the open market is narrow, due largely to the dullness reigning in the paper box industry.

**GRIND WOOD.**—There is a moderate amount of business current in ground wood. Consumers are buying mainly against direct requirements, but producers and dealers say they are overdone little or no difficulty in finding an outlet for all the pulp they have for spot shipment, and prices are holding steady at \$125 to \$130 a ton at grinding mills. The strongest factor in the market today is that grinders haven't the surplus of pulp stored away that they invariably have at this time of the year. This leads pulp men to believe that when demand broadens in the early winter, as it customarily does, supplies will fail to be large enough to cover the wants of buyers and that values will undergo sharp enhancement. Doubtless

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The castings which we make for this purpose are of "WORLD" *Acid-resisting Bronze*, a metal which years of use, under exacting conditions, has proved to be the best suited for this purpose.

Let us know your requirements. We will be glad to send you a *Sample Casting* for an *Acid Bath Test*.

If you are not entirely satisfied with any Valve or Fitting you are now using send to us for a sample to try in actual use.



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TORONTO

N.B.  
VANCOUVER.

this is one reason why manufacturers are not pressing consumers to anticipate their forward requirements, and why they express satisfaction over the manner in which buyers are operating at present.

**CHEMICAL PULP.**—Demand for chemical wood pulp is far from strong or voluminous, yet the market is attended by fair activity insofar as regards trading in current lots of pulp. Papermakers are confining their buying almost solely to tonnages immediately required, reflecting their evident belief that the market is destined to go lower and their unwillingness to buy ahead in the fear that they might find themselves later on with stocks representing a higher cost than at which they could be acquired at that time. The strongest kinds of pulp at present are bleached sulphite and soda pulp. Few producing mills have these pulps to offer for prompt delivery, being generally sold up, and the scattering spot lots available are held at high prices. Kraft, on the other hand, is softening in price, while unbleached sulphite appears easing off slightly. Quotations show no marked change at about these ranges: Domestic bleached sulphite, 12 to 12½ cents, and foreign, 13 to 14 cents; domestic unbleached sulphite No. 1 grade, 8¾ to 9 cents, and foreign, 9¾ to 10 cents; domestic easy bleaching sulphite, 9½ to 10 cents, and foreign, 10½ to 11 cents; domestic kraft, 7 to 7¼ cents, and foreign, 7¼ to 7½ cents.

Imports of wood pulp at the port of New York this week included 878 bales from Yokohama, 1,500 bales from Hull, 711 bales from Osaka, and 61 bales from Hamburg.

**RAGS.**—New cotton rags are in a steady market position and demand appears ample to sustain values, whereas old papermaking rags are little wanted by consumers and prices are moving consistently toward lower levels. The reason for this divided state of affairs chiefly is that new cuttings are in limited supply, due to the slow operations of cutting establishments, and are therefore wanted by buyers. Old rags, however, seem in plentiful supply, both at mill centres and in dealers' hands, and the former are holding off in buying in expectation that they will be able to secure supplies later at lower prices. White shirt cuttings, which are marked by a good inquiry, are priced at 26 cents and up to 27 cents per pound. Unbleached muslin cuttings are held at 19 cents, washables at 13 cents, while lavins at 22 to 23 cents and new light silesias at 15 cents. Roofing rags have declined further, with sales reported of No. 1 packing down to 2.10 cents at shipping points. Old white and

blue rags are quotably easy and are moving only in limited quantities.

Receipts of foreign papermaking rags at New York this week included 445 bales from Havre, 210 bales from London, and 56 bales from Buenos Aires.

**PAPER STOCK.**—The market for low grades of old paper is in a chaotic condition. Due to the refusal of most box board mills to buy, offerings are increasing and prices are dropping at a rapid rate. Dealers, in their anxiety to find outlets for old newspapers and mixed papers, are accepting almost any prices within reason they are offered, and folded news has sold down to 1.80 cents a pound f.o.b. New York and No. 1 mixed paper at 1.50 cents. White news cuttings, which ruled strong for a long time, can be bought today at close to 6 cents a pound at shipping points, while over issue newspapers are freely offered at around 2.15 cents. Old kraft paper is quotably lower at about 6 cents, as are books and magazines at 3 cents. Shavings represent about the only grade holding firm in price. Packers are demanding and getting 8.50 cents for No. 1 soft white shavings at shipping points and in the vicinity of 9.50 cent for hard white shavings of No. 1 quality.

**OLD ROPE AND BAGGING.**—There is moderate activity in old rope and prices are maintained at 6.00 to 6.25 cents per pound for No. 1 manila rope. Old bagging is in very slack demand and largely nominal in price, there being few transactions on which to base values. No. 1 scrap bagging is available to mills at 2.25 cents and less, roofing bagging at 1.25 to 1.50 cents and gummy at 3 cents.

Imports of old rope at New York this week included 224 coils from Hull and 106 coils from Liverpool. Receipts of foreign bagging at this port included 720 bales from Antwerp and 250 bales from Genoa.

### DO WE CARE?

Every now and then someone is hurt in an accident and we hear people say "Oh, he was careless". Is that so? Didn't he care? Did he want to be hurt? He may not have thought of what he was doing but he certainly cared whether he was hurt or not.

We are told that one half of all fatal accidents occur before the age of twenty and then one twelfth of all deaths are due to accidents. Do we care? Maybe. Probably. But why don't we cut down these awful annual losses due to needless accidents and fires?

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## THE BEST LITHARGE YOU CAN OBTAIN--CARTER'S

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# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., Oct. 19th, 1920.

No. 43

## TABLE OF CONTENTS

### Editorial :

- Our family Thanksgiving dinner . . . . . 1085  
Educating paper-makers in England . . . . . 1085  
The Shawinigan Review . . . . . 1086

### Special Articles :

- Consumption of power in beating . . . . . 1087  
The only practical remedy for our disappearing forests . . . . . 1090  
Some economic aspect of welfare work . . . . . 1091  
Technical education in paper-making . . . . . 1093

### Miscellaneous Information.

- Is your home safe ? . . . . . 1086  
The specific gravity of paper pulp . . . . . 1088  
Suitability of southern woods for pulp and paper manufacture . . . . . 1098  
American conditions deemed unsuitable for plant fibre paper . . . . . 1098

- The Wisconsin State Board of Health says . . . . . 1100  
Safety work and industry . . . . . 1104

### News of the Industry :

- Chance for Canada in India . . . . . 1089  
United States notes . . . . . 1089  
To carry pulpwood . . . . . 1090  
Another Port Arthur project . . . . . 1092  
Presentation to D. W. Sherman of the Canadian Export Paper Company . . . . . 1092  
Riordon rounds out timber holdings . . . . . 1095  
Belgian paper trade conditions . . . . . 1096  
British trade news . . . . . 1097  
Pulp and paper news . . . . . 1099  
Three Rivers Pulp and Paper Co. . . . . 1099  
To make paper machines at Port Arthur . . . . . 1100

### Markets.

- Canadian trade conditions . . . . . 1101  
New York markets . . . . . 1102

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J. NEWELL STEPHENSON, M.S., Editor.

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for. Subscription to any address in Canada, United States and British Empire, \$5.00 yearly. Other Countries Postage Extra. Single copies, 15 cents.

Changes of advertisements should be in the Publishers' hands ten days before the date of issue

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RAILWAY SUPPLY



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STEAM ENGINE



PUMP



PARTS AND SUPPLIES



SCALE



MACHINE SHOP SUPPLY





# EDITORIAL



## *OUR FAMILY THANKSGIVING DINNER.*

The Industrial and Educational Publishing Company, publishers of the Pulp & Paper Magazine and other technical journals moved from Montreal to Ste. Anne de Bellevue two years ago and established the Garden City Press. One of the fundamental ideals of the concern is to develop an organization that is an institution rather than a business. In harmony with this desire the company has bought land surrounding the new printing establishment and is developing what will one day be really a garden city. Comfortable cottages are being erected as rapidly as conditions permit and in company with the growing personnel of the plant.

Last year the President and General Manager, Mr. J. J. Harpell, conceived the idea of gathering the employees and some local friends of the company about the banquet table for a Thanksgiving Dinner. The event was such a success that it was repeated this year on a slightly larger scale and the staff from the branch plant at Toronto were invited to come down. Altogether about seventy partook of the menu and enjoyed the brief, earnest speeches.

The most striking one was the talk of the Hon. W. S. Fielding who responded to the toast to "Our Country". After dwelling on the fact that Canada is enjoying comparatively peaceful conditions while there is unfortunately so much distress and unrest throughout other parts of the world, he outlined some of the reasons for this happy state of affairs in the Dominion. Mr. Fielding's particular plea was for a greater realization of individual responsibility for maintaining our government, especially on the part of the young people who will soon be required to carry the burdens of their fathers. It is a time for serious thought and consideration as to whether there is the same sense of responsibility among the young people of today that the older generation, now passing, speak of as rather common in days gone by. Certain it is that the happy conditions that we enjoy today are in no small part due to the unselfish efforts of the public men who have so far guided the affairs of provincial and dominion governments.

It would be difficult, if it were possible, to find in Canada a man today who is better qualified to make such an appeal to the young people than is Mr. Fielding. For thirteen years the Premier of Nova Scotia, for fifteen years Finance Minister of the Dominion and latterly a prominent figure in the Dominion Par-

liament, his forty-three years of clean and self-sacrificing service to the people of Canada is an object lesson that would be difficult to duplicate in the world today. The publishers of the Pulp & Paper Magazine are proud of their association with Mr. Fielding who is editor of the Journal of Commerce which is also printed at the Garden City Press. His example should be an inspiration to all of those who have a desire to take an active part in parliamentary affairs as well as to us all, who should feel a greater sense of obligation and responsibility as to how we discharge the privileges of residence and citizenship in the Dominion.

## *EDUCATING PAPERMAKERS IN ENGLAND.*

At the convention of the Technical Section of the British Papermakers Association which has just been held in England, Major J. E. Aitken read a paper on Technical Education in Paper Making which vigorously supports the work so extensively and courageously undertaken on this side by the Technical Section of the Canadian Pulp & Paper Association and our confrères across the line. Major Aitken cites an instance of a young man who was so desirous of improving his knowledge of the industry that he was willing to take two years in order to cover a single session course because he was employed on shift work and could attend classes only every other week. Ambition of that kind we believe is not exceedingly rare nor confined to England. There is a thirst for knowledge among papermakers as there is among those engaged in other industries. There is a realization on the part of many who are engaged in this industry that they have missed something. There may be a bit of jealousy, but we believe it is rather a feeling of disappointment in the minds and hearts of many that they were obliged to leave school or voluntarily left school at an age when others continued their studies and in later years find themselves handicapped by a lack of knowledge, often of a simple and elementary character. The editor realizes the position of the young man mentioned by Major Aitken as he one time found it necessary to attend a certain class and could attend only every other week (mornings after the night tour), because of the same reason, being engaged on shift work. This is a serious problem in educating the papermaker and one that affects relatively few industries.

Major Aitken suggests one method of overcoming the difficulty, by repeating the same lecture immediately. A Canadian mill is planning to accomplish the same

result by repeating the lesson two weeks in succession so that all who wish may get the full course. In addition to those who can attend such classes there are also a number who cannot do so and who are best provided for with regard to educational opportunities by providing correspondence courses. England already has some opportunities of this character and correspondence courses are well known in the United States and Canada.

One of the principal factors in the success of any educational work intended to benefit those employed in industry is the co-operation of the employer with the employe and the educational agency. Undoubtedly there is just a smouch ambition among our pulp and paper makers on this side for a better education as there is among British mills, even though some people think that the present day workman is interested only in the mill whistle and the pay envelope. There are unfortunately a large number of such employees and there always will be but we believe that as educational opportunities increase there will be fewer clock watchers and more quality watchers. It is gratifying that the Technical Section in the Old Country is interested in this coming problem which has engaged so much attention from the Technical Section in Canada.

#### THE SHAWINIGAN REVIEW.

Like the seed of corn that is planted, the *Belgo-Bulletin* has died that something bigger might come to life. So it happens that we have the *Shawinigan Review*, a weekly paper serving the social, industrial and civic interests of the people of Shawinigan Falls, P. Q. It is printed in French and English and covers the events of the city and its many industries. The old *Bulletin* served the one industry, the *Belgo-Canadian Company*, probably better than the *Review*, but there is a community spirit at the Falls and the new publication will be a big factor in uniting and promoting the interests of the people there. Besides items about the various plants, subjects of civic and social interest are included.

#### CORWERS.

One of the most striking comparisons in the recent report on the exports of pulp and paper is the item relating to groundwood. In the month of August, 1919, the value of this item of export was a little over \$475,750. During the same month in 1920 the value had risen to \$2,500,000 or almost exactly six times. This increase in value was very largely due to a considerable increase in price but the quantity during the same period increased from 387,000 cwt to 816,000 or a little more than double. The price is still well maintained and with new production coming on the market there is likely to be a continual increase in the value of this product even though there be some slight recession in the price per ton.

We understand that by using paper clothes one may have a new suit every week. From some things we hear, it looks as if one would have to.

Where provision has not already been made for the winter's coal supply, there is likely to be some scrambling before January. These brisk autumn days, with a touch of frost in the morning remind us of what is to come.

One frequently hears a man say that the world owes him a living. This is not so. The only thing the world owes a man or is under obligation to give him is an opportunity to earn a living. This means that industries are under obligation either to furnish continual employment with at least a living wage or to pay such wages for seasonal employment as will provide a fair average income for the whole year. The former is by far the better because of the moral effect of having continuous employment and a permanent residence. Pulp and paper companies are constantly striving to organize in such way as to provide this type of employment. One of these days an employer will be required by law to do something of this kind.

#### IS YOUR OWN HOME SAFE?

Every year there are hundreds of citizens badly scalded by boiling water and year by year by the appalling total of children scalded to death grows. **Put all hot liquids out of reach of the babies.**

Gasoline fumes will explode when exposed to flames. Coal oil poured on a burning fire has wrecked many homes. Gasoline should not be kept in the house and always keep it away from fire. If you think you must use a small cup and stand clear of the rush of flame.

Matches have a horrible fascination for children. Hundreds of fires have resulted from children playing with matches and many young lives have been suddenly snuffed out—because someone was careless with matches.

Someone has said "An upturned nail is a prong of evil." Keep your house and property free from broken glass and boards with nails in them. Blood poisoning and serious infections are often the result of stepping on nails or broken glass.

Keep all poisons out of reach of the children. Put a piece of tin in the cork of the bottle so you will know a poison bottle even in the dark. If you can, do not keep any poisons in the house.

Figures show that falls are responsible for more accidents and deaths than any other cause in the home. Keep your stairs, especially the cellar steps, clear of boxes, bottles and other material. Keep the steps in good repair. Keep dark halls free from obstructions that might trip someone. Train the children to put toys away instead of leaving them lying on the floor.

Nearly all of the cases of infection and blood-poisoning are caused by the neglect of small injuries. If you scratch or cut yourself use iodine to kill any possible infection. Iodine is cheap and efficient.

The children of the community are the responsibility of the fathers and mothers. Parents are morally obligated to make their homes safe and to teach safety to the children.

# The Consumption of Power in Beating

By W. B. Campbell, Process Engineers, Limited, Montreal

The economical use of power in the beating process is a subject which has received slight attention in American paper mills. Very few plants are equipped so as to be able to measure accurately the power consumed under various conditions. In the majority of cases power is provided for maximum requirements and the beater is operated to produce the result desired, regardless of whether this is obtained with a large or a small expenditure of horse-power-hours. The facility with which the action of the beater may be modified to produce different results and the skill which an experienced beater man displays in adapting his procedure to the pulps provided for him and to the product desired, also tend to discourage any accurate study of the reactions. Whether to work with a light furnish and high circulation speed or with a heavy furnish and correspondingly low circulation speed are matters usually decided by the beater man in the light of his particular experience, rather than by an exact knowledge of the power consumption in the various alternatives. With the present lack of data this condition is likely to persist for some time, since no hard and fast rules should be laid down before they are proved. This, however, should not be a bar to utilizing the information actually at hand.

Up to the present, progress in beater design has been slow on account of this lack of knowledge of the fundamental factors involved. Such progress as has been made is due largely to the instinctive feelings for what is right rather than to calculate improvements. Naturally many of the changes brought about in this way have proved by experience to be of no advantage and in such cases they have disappeared in the course of time. When the changes showed good results they have been retained. It is out of the accumulated experience of these things which have been tried and have been proved or disproved by practical working that there has come to be a certain general conception of what is desirable in a beater. Rapid circulation and heavy furnishes are generally considered advantageous although it is doubtful whether many papermen could back up their opinion by logical arguments. In the same way the circumferential speed of beater rolls has become practically standardized at from 2000 feet to 2300 feet per minute. Although these things are difficult to prove they are nevertheless the result of sound experience accumulated over many years, and at the cost of many experiments and mistakes.

While the fact is recorded in several places in the literature, it is probable that many paper makers will be surprised to learn that, other things being equal, **the power required by a beater is greater when filled with water only or with a light furnish than it is with a heavier furnish.** Even so experienced and able an investigator as Beadle was surprised at this and notes it as very curious though without finding adequate explanation. As will be seen later, however, the reason is quite simple and like many other mysteries, it is a mystery only so long as some of the factors are unknown.

Let us consider where the power for the beater is used. In the first place, a portion of it is necessarily absorbed by friction in the bearings. The next and the greatest portion of the power is absorbed between the

beater roll and the bed-plate or perhaps it would be more correct to say between the beater roll and the stock passing under it, since, unless the roll is down extremely hard, it does not really touch the bed-plate; otherwise there would be no rubbing action on the fibres. It is this part of the power which does the real productive work in the beater. The third portion of the power is used in accelerating the stock and water from the very low velocity with which it moves in the tub to the circumferential velocity of the roll. This portion of the power has received little attention from most investigators and, indeed so far as articles published in America are concerned, only those by Schlick mention it at all. In addition to these three main uses, power is also wasted, to some extent, in the churning of the stock in the immediate neighborhood of the roll and also in elevating it from the level in front of the roll to the level behind the roll. Comparatively speaking, however, the power consumed in these latter ways is very small and, until greater refinements are reached in our other calculations, it may be neglected.

Since the power consumed in journal friction is a matter of mechanical engineering only, we may leave it out of consideration in this paper and devote our attention entirely to the uses of power in the beater itself.

With regard to the power consumed between the roll and the stock and between the stock and the bed plate it may seem at first that this power will increase as the consistency of the stock increases. It is doubtful whether this is a fact, at least within certain limits. In all cases where power is absorbed in friction the amount of power consumed varies directly with the pressure between the two surfaces in sliding contact. For every two surfaces there is a co-efficient of friction by which this pressure must be multiplied to obtain the measure of the force which opposes motion. If the roll is rubbing against a layer of fibres, which in turn are rubbing against the bedplate, it will be seen, therefore, that the actual resistance produced here is dependent only on the nature and condition of the fibres and the pressure of the roll against them. It must be remembered, however, that in the case of a very thick furnish the pressure of the roll may be increased when the thickness of the furnish is increased, since a large amount of solid material will be drawn in between the roll and the bedplate, thus furnishing pressure which tends to raise the roll. On the other hand, the thick furnish, by providing more fibres to support the actual weight of the roll, decreases the amount of pressure on each fibre though leaving the total resistance unchanged. So far as the writer is aware no experiments have been made to determine the actual co-efficient of friction between different fibres, and the material of beater rolls and bed-plates. Assumptions have been made by various experts but it is doubtful whether there is much authority for them. Until scientific data is accumulated on this point, we must content ourselves with the knowledge that the power in this portion of the beating is proportional to the circumferential speed of the roll and to the pressure between roll and bed-plate, multiplied by some co-efficient of friction, at present undetermined, but which is in the neighborhood of 0.1.

We next come to the third portion of the power—that used in accelerating. As the stock approaches the roll it has a velocity of say 15 feet per minute or 0.25 feet per second. It has, therefore, stored up in it energy amounting to

$$0.25^2 \div 64 = 0.001 \text{ foot pounds}$$

for each pound of material, including both stock and water. As it leaves the roll it has the velocity of the roll face or about 35 feet per second. The energy stored in it per pound of material is then  $(35)^2 \div 64 = 19.14$  foot pounds. The first figure is so low that it may be neglected without serious error and we may consider that for each pound of material passing the roll 19.14 foot pounds of energy must be added. In a beater having a tub at 15 square feet cross section area and a velocity of circulation of 15 feet per minute, the amount of material passing the roll per second is  $15 \times 15 \div 60 \times 62.5 = 234.4 \text{ lb.}^*$  The H. P. required for this is  $234.4 \times 19.14 \div 550 = 8.15 \text{ H.P.}$

If the speed of circulation is doubled by reducing the consistency or by other means, this power is also doubled since the amount of material to be accelerated per second is increased to twice the quantity. The power required for the acceleration becomes then 16.3 H.P. It will be seen that this is the explanation of the fact mentioned above, that a beater full of water or with a charge of low consistency consumes more power than one with a heavy furnish since the circulation speed is much greater. This phenomenon is much more marked when the beater is on a light brush than when the roll is down hard. When the beater is on a light brush nearly all the power is consumed in this acceleration, whereas when the roll is down hard a great deal of power is used between the roll and the bedplate and the difference due to acceleration, although the same as before in actual H. P. is a much smaller proportion of the total power supplied to the beater.

The actual beating effect is due almost entirely to the action under the roll and, with the same consistency, when the circulation is doubled naturally the beating time will be cut in two since there is double the quantity of material passing under the roll per minute. From this it will be evident that any change in beater design which enables the circulation to be doubled, will cut the beating time in two at a cost of power equal to that originally used for acceleration alone. If the total power supplied to the beater in the first place amounted to 50 H.P., of which 10 H.P. was used in acceleration and the beating time consumed four hours, the total H. P. hours for a charge would amount to 200. With four times the circulation speed the power required would be 90 H.P., and the beating time would be 1 hour. The total consumption of power for a charge would then be 90 H.P. hours, a saving in power of 55 per cent. due entirely to improved beater design.

If the assumptions made in connection with the power absorbed between the roll and the bedplate are correct it is immaterial what consistency of stock is fed to the beater and the power required for this portion of the work will depend only on the pressure between the roll and the bedplate. This pressure, of course, may be greater if the consistency is very high, on account of the fact that much solid material will be passing under it and will tend to press the roll upward. High consistency brings with it another factor which is important although not at present susceptible of mathematical

treatment. When stock of high consistency is agitated, even without any roll and bedplate, it becomes hydrated by the friction of the fibres on each other and we have then a certain amount of beating which takes place along the entire trough. This fact has been realized by beater-men for a long time and is really the basis for their practise of running a beater at as high a consistency as possible, especially when making greaseproof and other papers where hydration is important. Moreover, if circulation speed is constant and consistency is doubled the capacity of the beater is also doubled.

It will be noted that the above conclusions take no account of the particular kind of beating desired. It is immaterial whether the stock is to be beaten in such a way as simply to cut the fibres or both to cut and hydrate or simply to hydrate. The considerations apply to all cases and lead to the conclusion that in the design of a beater from the point of view of power efficiency the shaping of the tub so as to secure as great a circulation as possible is of greatest importance. Designing the beater for use on a particular stock is another matter and is concerned chiefly with the material and proportion of the beating surface. For instance, if blotting paper is to be made, the beater bars and bedplate should be sharp, with as small a surface as is consistent with strength. If more rubbing action is desired, so as to increase the proportion of hydration effect, the bars should have more surface and should be dull. If the rubbing action is to be carried to an extreme, a wide rough surface such as is provided by basalt lava should be used.

For the most part very little attention has been paid to the design of the beater tubs in America and it is not out of place to suggest briefly the lines along which improvements can be effected. In the ordinary beater tub the circulation is secured by the roll raising stock to the height of the backfall in order to provide a head which in turn causes the stock to flow around the tub. In most cases this head amounts to approximately half the diameter of the roll. By carrying stock higher up and delivering it over the top of the roll, as is done in the old Horne beater and the new Rabus beater, the head is doubled and moreover the velocity which has been added to the stock, at the cost of acceleration horse power, is turned in the direction in which the stock is intended to flow. Again, in ordinary beater tubs the stock flows down one side of the beater, makes a sharp turn at the end and flows back on the opposite side. The frictional resistance of the trough in this case is extremely high, not only because the cross section is of a shape poorly designed for the easy flow of the liquid, but the sharp turn at the end impedes the flow tremendously.

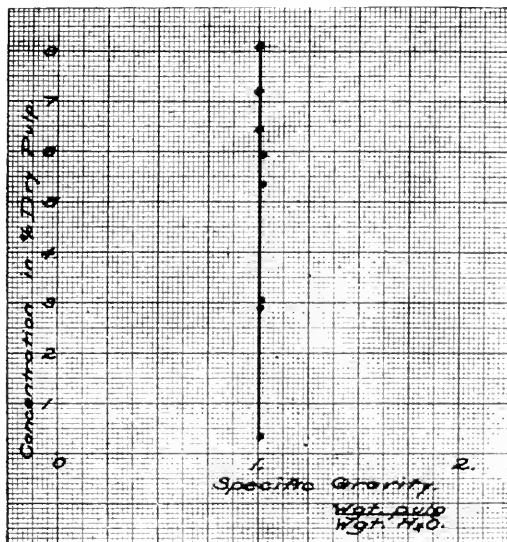
By making a trough with a cross section more nearly approaching a semi-circle and of an outline with easy curves we may expect a vast increase in the speed with which the stock circulates and a corresponding increase in the all round power efficiency of the beater.

#### THE SPECIFIC GRAVITY OF PAPER PULP.

About six years ago the Editor read a statement in a magazine which intimated that a cubic foot of stock in the beater weighs 50 pounds. Landolt and Bornstein tables give most fibres a specific gravity of about 1.5. The two statements do not agree. With the assistance of Mr. A. O. Bragg, then a senior student at the University of Maine, a simple investigation was carried out. A 2-liter Erlenmeyer flask was filled with bleached sul-

\* See notes in next column showing relations of weight and concentrations. Ed.

phite pulp which had been slightly beaten, and from which some water had been squeezed out in the hand. Air bubbles were eliminated as far as possible with a stirring rod. The net weight was found and the specific gravity calculated from the weight of an equal volume of water, both pulp and water being of the same temperature. The percentage of bone-dry fibre was determined by placing a small sample of the stock in flask, about 20 cc, in a small beaker, weighing carefully, drying thoroughly, and again weighing. About half the stock in the flask was then discarded, the volume made up with water, and the process repeated. This was done several times and the results plotted to show specific gravity as related to content of bone-dry fibre, which the chart will show.



The airing of this bit of work is suggested by the fact that W. B. Campbell, in his interesting article on the power used in beating, uses 62.5 lb. as the weight of a cubic foot of stock. This we agree with for straight pulp, but believe it would be different, may be 65 lbs. or more, if the paper is sized and loaded or if very thick stock is beaten till all air is removed. Perhaps some readers have other data or opinions on these matters.

#### CHANCE FOR CANADA IN INDIA.

Mr. F. P. Scharsmidt, Canadian Trade Commissioner to India and Ceylon, says, in the Weekly Bulletin, of the Department:

There is a pressing need in India for paper and fibre boxes, and at the present time Japan enjoys almost a monopoly. Prices of boxes have increased from 300 to 400 per cent and Canadian manufacturers would do well to look into the possibilities of this market.

Owing to the conditions above described in connection with tea and rubber boxes, I can see no reason why the introduction of wood fibre boxes into India would not prove successful. Manufacturers contemplating the introduction of fibre products into India for the tea packers must bear in mind that the same must be odorless, but this does not apply to rubber containers.

## United States Notes

Mr. H. W. Welsh, former manager in Sherbrooke, Que. for the E. & T. Fairbanks & Co. Limited, and latterly manager of the Scale Department of the Canadian Fairbanks Morse Co. Limited, Montreal, Que., has joined the organization of the MacKinnon Steel Co. Limited, Sherbrooke, Que., as Manager, and has already assumed his duties.

The MacKinnon Steel Co., Limited, of Sherbrooke, Que., have been awarded contracts for structural steelwork in connection with the large extensions which the Brompton Pulp & Paper Co., of East Angus, Que., are making to their plant, and at present are busily engaged in the fabrication of steelwork for Grinder Room, New Boiler House Extension, Sulphite Mill Boiler House, etc.

The office of the Technical Association of the Pulp & Paper Industry has been moved from 18 East 41st Street, New York City, to 512 Fifth Avenue.

After spending about 18 months with the Federal Trade Commission, at Washington, D.C., M. L. Smith has just become associated with the News Print Service Bureau, with headquarters in New York City.

The Penobscot Chemical Fibre Company is planning some extensive improvements at its Great Works, Me. mill. Among them are a new digester house and blow pit room. It is estimated that this addition will cost in the neighborhood of \$100,000.

A news report from the New York State College of Forestry at Syracuse states that the course in paper making has become so popular that it has been found necessary to limit it to the sophomore and higher classes.

The work new sulphite mill and wood room of the Consolidated Water Power and Paper Company, which was started the early part of this year, is nearing completion. The engineering department of the company has announced that operations on both will begin the first part of November.

According to a news dispatch from Appleton, Wis., the Fox River Paper Company is making many improvements to the mill at Tehulah, which was purchased from the Kimberly-Clark company recently. It is planned to have the mill in good running order for the manufacture of writing papers by the first of the year, when it will be formerly transferred to the new owners.

The Giant Paper Products Corporation has just been chartered at Wilmington, Del. The company has a capital of \$1,500,000 and will engage in the manufacture of paper and paper products.

Another incorporation recorded during the interval is that of the West Dudley Paper Company at Pawtucket, R. I. This concern has a capital of \$500,000 and will engage in a general paper and pulp business. The incorporators are: L. P. Emerson, Lowell Emerson and J. C. Knowles.

The meeting of the American Paper and Pulp Association, scheduled for November 12, at the Congress Hotel, Chicago is creating considerable interest among the wood pulp members, as it will deal in part with the logging methods, reforestation, purchase of pulp wood lands and taxation of same.

Plan great things if you would be successful, but remember that mere planning accomplishes little. It is the action that produces results.

## THE ONLY PRACTICAL REMEDY FOR OUR DIS- APPEARING FORESTS.

Editor Pulp and Paper Magazine.

The International Paper Company, in a recent advertisement in the "American Forestry", states:—"If the Canadian forests held by leases which convey all rights of property to the timber, could now be regulated, and scientifically protected and operated as are the company's forests in the United States, there is ample authority for an annual increment of at least four per cent."

In the first place it would be interesting to know of any lands in the United States or Canada, either owned by the International Paper Company or any one else, that are producing a net annual increment of four per cent.

Secondly, if the International Paper Company is practising scientific forestry methods on its lands in the United States, it also would be interesting to know where.

The only practical forestry and the only way we can save the remnants of the once magnificent forests that covered this continent, is:

- (1) By immediately reducing the present cut at least one-half.
- (2) By greatly increased fire protection.
- (3) By improved and less wasteful logging methods.
- (4) By planting at least six seedlings for every tree



FRANK J. D. BARNJUM.

cut or otherwise destroyed, as not more than one tree out of six planted ever reaches maturity).

To show the fallacy of the statement of the International Paper Company, it is clear that if there had been a net annual increment of even one-half of one per cent, on this continent (instead of an annual growth of four per cent, as claimed, there would be more timber standing to-day than there was one hundred years ago.

It must be borne in mind that even if we reduced the present volume of the cut one-half and began planting, not millions but billions of seedlings, it would entail a wait of at least fifty to seventy-five years for the

maturity of the crop, while the best authorities we have in the country state that the present supply of timber in the East will be exhausted within a period of twenty-five years.

- Therefore, all this idle talk about supplying our mills in perpetuity by improved forestry methods is simply pure bunkum, unless we reduce our cut, at once, at least to one-half the present amount.

This applies with double force to Canada, due to the fact that fire has done and is doing a far greater damage than in the United States, and from the added fact that a large portion of our wood growth is so far north that it is too small, too scrubby and too inaccessible to be available as a pulp wood supply, and also from the fact that it is acknowledged that the standing supply of timber in Canada is only about one-fourth of the amount still remaining in the United States, small as their supply now is.

The thought which I wish to bring out prominently is that, even if we, at once, begin planting six trees for every tree cut or destroyed, it will take fifty to seventy-five years for the new crop. Hence, it is necessary, immediately, to reduce our cut, at least one-half in order to make our remaining supply hold out till the new crop matures.

The above conclusion is based on the claim of the best authorities that we have a twenty-five year supply in the East. On the other hand, if my own opinion is correct that this supply will last not more than fifteen years, then the gap between the end of the present supply and the maturity of the new crop will be correspondingly greater.

In addition to the fire loss, the loss that is being caused through the ravages of the Spruce Bud Worm and other enemies of our forests, is simply appalling: in fact at the present time, and during the last three of four years, it has amounted to more than our loss from fire and wind.

The International Paper Company states in their advertisement that they have holdings amounting to 4,500,000 acres that will average five cords per acre; but they fail to state the fact that of these holdings only in the vicinity of 750,000 acres are in the United States, and even conceding their own figure of five cords per acre, and their consumption of 700,000 cords per year, this would only give them sufficient to supply their American mills for a period of five years.

Small wonder there was frantic appeal for the passage of the Underwood Resolutions.

FRANK J. D. BARNJUM,

Annapolis Royal, N.S., Oct. 9, 1920.

Editor's note:—It is very gratifying to learn that American paper companies are making efforts to make their forests productive as mentioned here. The International will soon be making pulp and paper in Canada from Canadian wood and their good example in scientific forestry and lumbering will be a great help in forwarding the cause on this side of the line.

### TO CARRY PULPWOOD

It is announced by the St. John, N.B., office of the Canadian Government Merchant Marine that the steamer Canadian Sailor will be put on a regular service between this city and Portland, Me., carrying pulpwood. It was said that the Canadian pulpwood cannot be sent into the United States in Canadian cars and foreign cars cannot be obtained, so recourse is had to the water route. It is expected that large shipnets will be made from this port.



# Some Economic Aspects of Welfare Work\*

By H. P. CARRUTH, General Manager, Mead Paper and Pulp Company, Chillicothe, Ohio.

I have been asked to present to you the economic aspect of safety work and similar measures sometimes grouped under the general heading of Welfare Work.

Welfare work has been somewhat criticised of late as smacking too much of paternalism in these days of rampant democracy and as no doubt it carries to the minds of many of us a rather smug odor of sanctity or rather of sanctimoniousness. It associates itself with "Scientific Management", "Efficiency" and other words and phrases that have been overused or misused until one hardly dares use them at all for fear of creating an unfavorable effect upon the audience.

To clear the air, therefore, let me say at once that I believe in Welfare Work, not as it has been practised very frequently as a sort of general specific for all the industrial ills, but as part of a general industrial policy which is in line with the trend of the times and in sympathy with the modern idea that workmen are regular human beings, thinking and reacting like the normal man in any walk of life.

Safety work in general appears to me as one aspect of a general program looking toward industrial progress. No doubt there will be others here today who will be able to give you facts and figures showing how many dollars each type of accident costs the employer, the employee and the community. I believe such data is well worth while but I do not propose to use any in this paper, but rather to present the subject in a more general way.

My subject then is to try to show that under proper conditions efforts to improve the living and working conditions of men and women employed in industrial plants are a proper activity for manufacturing plants to consider because they can show a profit on the year's operations which is the legitimate field of industry.

You will notice that I said "under proper conditions". The importance of this cannot be over emphasized. All of the welfare work conceivable will be a most dismal failure if the general conditions of the plant are not sound before such work is begun. The employer who uses welfare work on a substitute for proper wages or working conditions is inviting trouble.

Assuming that conditions are sound, which means good wages, (not only in the sight of the employee, but so admitted by the organization as a whole), a clean and well kept plant, foremen who are fair and straightforward in dealing with their men, a sound business policy and efficient management which protects its men against unemployment to the maximum degree and a generous dash of the Golden Rule, we have then the foundation upon which profitable welfare work can be built.

It is almost inconceivable that a plant which conforms to the above specification could be doing no welfare work, but frequently it is quite unorganized and hit or miss. When unorganized, it is likely to be unfair or unjust. To illustrate: two men become incapacitated by serious illness. The first man has lived up to his

income, the second is more thrifty and has laid by a bit against the rainy day. Our first man and his family soon become in abject need and sooner or later help is forthcoming, either from his fellow workmen or as a loan or gift from the company. The second man is known to be able to stand the strain for a while so no help is given. In other words the man who has been thrifty is given less consideration than his less valuable fellow workmen, assuming that thrifty workmen are better and more valuable in our mills than the shiftless. This is not a square deal.

My illustration might be given to show that unorganized benevolence to employees tends to create the exact opposite of the spirit which is desired, and of necessity it must be of the most paternal character except perhaps in very small organizations.

On the other hand organized benevolence in industry is likely to be a cold-blooded matter-of-fact thing which has no advantage to the company and very little to the employee.

The proper basis seems to me to be to put all such efforts squarely before the men as co-operative methods which repay the man and the company mutually, although perhaps not in the same coin. The average workman is suspicious of his employer and if you do not show him what gain you expect to make he will be likely to suspect a sinister reason.

To sell safety ideas to workmen you must convince them that care is a sound investment which they should make for themselves and their families and also show the advantages to the company. Don't try to force rules and regulations down their throats, by means of signs and threats of discharge or punishment. Such means are no longer effective, in fact, they never were really of value.

To sell recreation to workmen it should be frankly stated that good health is an asset not only to the man himself, but to his employer also, because a healthy man is a better and more efficient member of the organization.

To sell insurance, whether it be wholly or partly paid for by the company, should be shown to be worth while to the company because it helps the men to stop worrying and so adds to their effectiveness on the job.

The same ideas hold in regard to all types of welfare work such as free medical and dental attention, visiting nurses, restaurants, etc. You cannot fool your men on these matters and you know you wouldn't do it if it didn't pay. At least you wouldn't do it except as individuals rather than as a company policy.

Now let us see just how these various types of welfare work do pay the employer. Like any other investment it is quite easy to put in more money than can be taken out. Unfortunately, when dealing with the human machine, it is very difficult to place exact figures on the improvements which result from any policy and again these values are constantly varying with location, with time and with general conditions. They are very difficult in different industries and change with the seasons. Nevertheless, every employer has a pretty clear idea what such factors as labor turn-over, good morals, health, quick learning, care, etc., have in his own business and can best interpret values for his special conditions.

\* Delivered before the Paper and Pulp Section at the Ninth Annual Safety Congress of the National Safety Council at Milwaukee, Wisconsin, September 30, 1920.

Sport organized by industry is perhaps the most widely used type of welfare work. This may be handled in many different ways, but has its chief value to the employer in its effect on morale and secondarily on health. In most plants the health factor is of small importance as relatively a small percent of employees take active part in such activities, the effect on morale is such greater but varies much in degree. Some companies strive to get results by producing a winning team at all costs, even to the hiring of professionals, while others bring into play the idea of true sportsmanship. The first idea is dangerous because in any league there can be but one winner and the losing team may have a bad effect on the organization from which they are chosen. On the whole, in my opinion, sport is one of the least profitable forms of welfare work.

Safety probably comes next in general use. The effect on profits of safety work is fairly clear. First, we have the direct losses when men are hurt which must be paid in insurance premiums which such work eliminates to a greater or less extent. Second, we find that safety work is frequently one of the best contact points between management and men out of which grow various benefits to the bank account. Then again, it has its effect on labor turnover and general morale.

Insurance of various kinds, whether life, accident or health, is valuable in its effect on turnover and helps to secure good men to fill vacancies. Its appeal is quite as much to the wife at home as to the man on the job. It also keeps the force as a whole in a proper mental condition by minimizing worry, and is especially valuable when a man returns from a siege of illness or incapacity due to injury.

Vacations are very highly regarded by the men, perhaps more highly than any other one thing. We all like to sit by the fire and plan our little outings for the coming summer and the workman is no exception to the rule. Illness is a goal which always attracts in prospect, although seldom justifying itself in the present. For these reasons vacations are a very powerful stimulus to hold men to their work if used as a special reward for continuous service. The value lies in their effect which is considerable on turnover, especially with employees of long service, and on general morale, they also have an undoubted effect on health, although this is more mental than physical.

Outings are of little value in developing morale, although frequently used for that purpose. When morale is already good they may be a stimulus, however, but it is doubtful if they are worth the cost which they frequently run into unless engineered by the employees themselves.

Free medical and dental service has a very definite effect on morale, turnover and production. Its value is naturally greater in those industries particularly liable to occupational disease, but is considerable in all cases. Many men will consult a company doctor, who makes no charge, long before they would spend the money to see their regular physician. This means the checking of contagious disease and in extreme cases might save a shut down.

House organs are almost a necessity in a well run plant as a means of selling the ideas of the management and increasing morale and loyalty. They form a connecting link between the plant and the homes of the men which is of the greatest value. They should, however, be something more than a collection of trite

phrases or collected sermons to make a profitable investment.

Co-operative purchasing is frequently a worth while addition to the best of welfare activities, but should only be undertaken after due consideration as there are many pitfalls for the unwary.

Housing is more often a necessary adjunct to operation than a real welfare effort. When necessary to consider, it should, however, be placed upon such a basis that it is something more than an expedient.

These are only a few of the great number of activities possible to the welfare department. All are good, all are potentially profitable but only as conditions warrant. The field for such efforts will vary with your own conditions as stated earlier. Look over your own problems, talk to your men and the profitable series of activities will not be hard to find.

In closing let me add one word which, although not on welfare or safety work, still lies at the root of all such work. It is my firm conviction that a workman reacts to the same influence as any other human being. This "psychology of the workman" of which we hear is a myth except as it is the psychology of human nature. Most of our mistakes in the past have been due to a tendency to think of workmen as a class or species differing from ourselves in important respects. This I believe to be an error which has been very costly to industry and to civilization.

Assuming that your employees are just normal human beings and that you yourself are normal, then it becomes very easy to predict what reaction will result from any labor policy, for by projecting yourself into the position of the workman your own reaction to the surrounding conditions may be expected to be the same as that of the great majority of your employees. There will be differences in degree, but not in kind. In brief, the Golden Rule is a practical and workable business policy.

#### ANOTHER PORT ARTHUR PULP PROJECT.

A delegation consisting of Mayor Matthews, T. N. Andrew, president of the Board of Health; E. T. Ross, representing the local branch of the F.P.O.; Alderman L. J. B. Boldue and William Scott, of the Pidgeon River Lumber Company, went to Toronto, recently to interview members of the Government in regard to the purchase of a timber limit for the Pidgeon River Lumber Company. The company, if it can secure a limit, has promised to erect a pulp and paper mill in Port Arthur.

#### PRESENTATION TO MR. D. W. SHERMAN, OF THE CANADIAN EXPORT PAPER COMPANY.

On behalf of the staff of the Canadian Export Paper Company, Mr. G. F. Steels, General Manager, presented, October 13th, a very fine travelling bag, containing a number of useful toilet articles, to Mr. D. W. Sherman, Manager of the Pulpboard Division, who, with his family, is leaving by the S.S. "Meganitic" this week to take up his residence in England, where he will represent several Canadian pulp and paper interests. Mr. Sherman, who is very well known, spent five years in the Sales Department of the Laurentide Company at Grand'Mere and Montreal, was two years at the Front and leaves Canada with the very best wishes of the Pulp and Paper Industry. He has taken an office in Blackfriars House, 20 New Bridge St., London.—E.C.4.

**TECHNICAL EDUCATION IN PAPER-MAKING.**

By Major J. EDINGTON AITKEN, Inveresk Paper Mill, Scotland.

(Reported by Our London Correspondent).

The members of the Technical Section of the British Paper-Makers Association held a conference the first week in October, at Manchester. Some very interesting papers were read and a predominant note throughout the proceedings was the advocating of methods based on modern principles and particularly a technical training for those engaged in the paper mill from the highest director to the youngest workman. Practical men, it was adduced, should have technical principles, as paper-making in the mill had ceased to be an Art, and, instead, had become a Science.

One of the most interesting papers read was on "Technical Education in Paper-Making", by Major J. Edington Aitken, (vice-chairman of the British Technical Section) of the Inveresk Paper Mill, in Scotland, who, as a sound technologist, gave some valuable advice. He said, in the course of his address:

Technical education is for the purpose of enabling those employed in an industry to acquire knowledge of the theory, principles, and fundamental methods involved in the various stages of the manufacturing process in which they are directly interested. The man whose training has been obtained in the works, without having acquired any knowledge of the broader principles upon which the industry is built, is generally satisfied with empirical methods, and often fails to appreciate any possible value in variations of procedure. He becomes imbued with the idea that there is only one way of conducting his part of the process, namely, that by which it had always been done by his predecessors and himself. It is difficult for him to comprehend that other methods based upon defined principles may yield a better result at less cost, and with greater efficiency.

The technical expert who, in the course of his training, or, by experience, has acquired a certain amount of business knowledge, and the Manager or Director whose business training has been augmented by technical knowledge, are each in a position to appreciate and discuss the aims and objects of technical suggestions of possible improvements, not only from the standpoint of their effect upon the manufacturing process, but also the bearing which they will have upon the output and returns. Commercial success and manufacturing economies will receive due share of consideration. Conversely, the paper-maker without technical training, and the technologist without business knowledge, very seldom appreciate each other, with the result that technical advancement and scientific control are much retarded.

**Benefits Derived From Technical Training.**

Paper-making occupies a somewhat anomalous position in British manufactures. Many employees can trace their ancestry back for generations and methods of conducting various operations have been handed down from father to son. In consequence of this conservatism, it is difficult to induce workmen, and frequently managers, to believe that more economical applications can be effected. Technical education must inevitably bring its influence to bear upon the industry if we are to make progress. The Paper-Makers' Association of Great Britain and Ireland has shown appreciation of its importance in the formation of the Tech-

nical Section. The second clause of the Association's constitution states as one of the objects:—"To promote scientific and technical education of those who enter the industry." On level ground one mill will not benefit more than another; but those employers who do all they can to ensure that their employees will have opportunities of studying the technology of the process will undoubtedly derive the maximum of good results. Qualities will be improved; economies will be safeguarded; less time will be spent in endeavouring to make adjustments, because, instead of guessing the probable cause of anything getting out of harmony, reasoning and deduction will become effective and greatest of all, the workman will take a more intelligent interest in performing his duties.

It is acknowledged by all, that if we are to maintain our position in the world's industry, we must improve our methods. The old "Rule of thumb" must inevitably disappear, and be replaced by systematic, scientific, and technical development, which can only be attained by diligent study of the theories and fundamental principles of, and their applications to the process. Technical education is the key note and the sooner paper-makers do everything possible to have certain employees trained to a good understanding of the principles and theory upon which each contributory department of the mill is based, the sooner will they be able to gain supremacy in qualities, yields, and financial returns.

Paper-makers are not philanthropists, and do not make paper simply for the satisfaction of users. A profit must be obtained. I dare not suggest what percentage increase would arise through improved technical education, because, to my certain knowledge on one occasion paper-makers did not look with favor on prospective profits. The story has been told before, but may be repeated in condensed form: A number of years ago, it was found that a certain waste product could be utilised. Experiments were conducted on a small working scale. Plans for the erection of commercial plant were drawn, and costs calculated. The expert employed to carry out the investigation declared that a large profit could be obtained. The paper-makers, however, with typical caution did not share the same confident outlook. Therefore, the waste material is still a waste in the majority of mills.

It is strange, if we do not care to admit the paradox, that at the same meeting at which the utilisation of waste products was under discussion, Mr. C. F. Cross made the following statement:—"Paper-mills are not run to make paper but to make money."

The scientific and technical education of paper-makers will be the means of ensuring that better papers will be made, the proportion of so-called waste products or more correctly, by-products will be diminished, and, incidentally, paper-makers will make more money. For specific purposes, it may not be desirable to increase technical knowledge, but let us hope that these are the exceptions which will prove the rule.

**Practical Men Should Be Technologists.**

The following once appeared in the trade press referring to a particular grade of paper:—"No workman at the ..... Mills is allowed to understand more than one stage of the process of manufacture. The paper remains a mechanical mystery."

It is a comparatively simple matter to acquire scientific and technical knowledge, but when one comes to apply such to the manufacturing process, handicaps

become very severe, and numerous difficulties block the way. Fortunately the technologist, by perseverance, clears one obstacle after another, and afterwards shapes a definite course for further progress. The purely practical man is often a good paper-maker, but under the strains and stresses of modern industry, it is advantageous that he should possess a knowledge of technological principles. If he does not desire to gain such information, there is no sound reason why he should be the means of blocking progress by constantly reiterating the old fallacy that theory and practice do not agree. If at any time we find difficulty in reconciling theory and practice, the discrepancy is entirely due to our own inability to devise means to bring them into harmonious concord.

There is a very limited amount of truth in the statement that practice can get along without theory, but it is only movement in a circle and not progression. Practice without theory can never reach the true goal. As theory is the science of practice they are inseparable.

Up to the middle of the nineteenth century, paper-making was an unscientific industry, conducted on empirically established motives, bluntly designated "Rule of thumb." I do not desire to affirm that good papers were not made while paper-making was included among the Arts. Many old papers are really excellent productions and bear evidence of marvellous ingenuity, practice and skill. I may here mention that the late Mr. Alexander Cowan, of Valleyfield Mills, (grandfather of the present generation), on being shown for the first time a sheet of paper made by machine, remarked:—"It is a wonderful imitation."

Paper-making has ceased to be an Art and has become a Science. This does not mean that it has assumed a higher status, but rather that it has changed from an industry of individual skill to one of systematised knowledge arrived at by progressive observation and experiment. By technical education we endeavour to apply Science to the manufacturing processes, seeking to interpret and explain every detail, so that the best results may be obtained.

Many manufacturers have the idea, when the word Science is used in connection with paper-making, that Chemistry is the one and only object of reference. This is by no means correct. Chemistry as one of the Sciences, and not the least important, controls quantities and qualities of all materials used and produced. Physics, with its inexorable laws demands strict obedience and close attention in every stage of the process. The mathematical accuracy of engineering in all its branches bears truthful record of power developed and used, in addition to all questions pertaining to conveyance, transference and economy of energy. The work of the engineer is as truly scientific as that of the chemist.

The practical sciences are contributory to each other, and perform complimentary duties. Conjointly, the application of these is called Technology. Various details require careful scientific study before we can appreciate and fully understand the processes involved in paper manufacture, and when this is accomplished, we shall find that paper can be produced with the minimum of treatment and losses and the maximum of yield and quality.

Technical education does not mean that there is only one way of attaining the best results. The principles are well defined, but the applications may be effected in various ways according to requirements or desire,

thus giving limitless scope for individuality and research.

### Managers and Foremen Should Have Technical Training.

I would respectfully suggest that all prospective Foremen and Managers should prosecute a course of technical instruction in paper-manufacture. At the present time, it would appear that appointments are frequently made from among the workmen according to no well defined system of selection—and it does not always follow that the best men get promotion. If it was ascertained by examination or other suitable method, that a particular employee possessed a sound knowledge of the technological principles of the process of manufacture, then undoubtedly that man would have definite superiority in qualifications over those who do their work in a routine or mechanical manner, merely as individual links in the chain.

The generally recognised evidence of technical training is the possession of certificates granted by a Technical College curriculums. Technical schools might be advantageously extended to include Physics, Applied Mathematics, Mechanical and Electrical Engineering, insofar as they have relation to the process of paper-manufacture. The object of technical training is not to make paper-makers into Chemists or Engineers, but to give sufficient knowledge of these sciences which will enable them to understand more fully the various stages of the process according to the degree in which they are controlled by, or based upon scientific principles.

Many young men after they have been three or four years in the mill, show a desire to know something more about paper-making than can be gained in the department in which they are employed. It is, however, extremely difficult for them to attend course of lectures on paper-manufacture, especially, if these are held on the evening of one of the five full working days. I believe I am correct in saying that the majority of such students do not tell the foreman, or manager, that they desire to or are attending technical classes. Some time ago, during the course of a conversation with a Managing Director, I mentioned the fact that one of his men had attended technical classes for two years. The Manager remarked: "He is a nice lad, but I did not know he was attending the College."

Let us consider what this meant to the young man. It took him two years to get over the work which should have been done in one session, as he could not attend during the week he was on night shift, and in this he is only one of many. He paid class fees and travelling expenses for two years, when it might have been arranged that attendance during one year would have been much better from the educational point of view. As the full curriculum consists of three complete sessions, the shift worker will take six years to get over the course, and for this he has to pay double expenses. Information gained in this way is intermittent and scraggy; therefore, difficult to assimilate, something like the old lady who, after reading a few pages of the dictionary, said it was very interesting, but she could not get the thread of the story. Technical lectures are not, or should not be, stereotyped, consequently a considerable proportion of the information would be lost to the student. (This problem of the shift worker is one of the most important and most difficult to be met in educational work in classes. This is a fine instance of how many young men appreciate educational opportunities.—Ed.). One way of over-

coming this difficulty is, if a sufficient number of students are in the same position and locality, lectures might be duplicated each week at different hours.

May we consider the question for one moment from the employers' standpoint? As the employer is bound to share very largely in the benefits which are to be derived by certain of his employees attending technical classes, I have no doubt that if he was aware of the fact, he would see to it that every facility would be given to enable them to prosecute their studies.

It cannot be too much emphasized that paper-makers should undergo a thorough and systematic training in the sciences which exert the controlling influences upon the qualities and properties of the finished sheet, and the economies of the mill.

While it is of paramount importance that the twentieth century Managers and Directors should have technical education and experience in addition to the business training which must be undergone, it is none the less desirable that a reasonable number of the employees and all foremen — general and departmental — should have proportional knowledge, and thus ensure that those who control the commercial destinies of the mill shall have the support of employees, who can appreciate and put into intelligent effect those scientific applications which shall raise the standard of quality, increase the output, and diminish waste.

The simple study of the technology of paper-making will not make a student into a paper-maker, unless he can gain the necessary mill experience, thus becoming practically acquainted with the applications of the theory and fundamental principles. The possession of theoretical knowledge without complete practical experience does not justify anyone claiming that he has anything more than a superficial acquaintance with the technology of the subject. Theory and practice are inseparable, and any knowledge of one without the other is very apt to make one dictatorial and dogmatic. The ability to show by example any instructions given will always be of the greatest value. It is not only desirable, but it is also essential that the student of the technology of the process should be able to demonstrate the results of his training in any department of the mill to which he may be appointed. Criticism of methods and processes may be very useful, but the full benefit can only be established by practical demonstration of the principles on which the criticism is based. It is always advantageous both to employer and employee when he is in a position to give practical effect to his instructions.

#### Value of the Technically Trained Man.

The technically trained man will be able to reveal many wasteful methods at present existing on account of deficiency of technical knowledge and scientifically organized control, even though they had never given rise to suspicions of extravagance or inefficiency. The Technical Section by fostering the claims of scientific education is bringing before the leaders of the paper-making industry, the only true means by which improvements and economies can be effected.

One of our cherished sources of pride, both National and individual, is that we have a praiseworthy history. Records show that our forefathers had the prosperity of future generations always in mind. Their progress was, however, circumscribed by the narrow limits of the technical knowledge at their disposal. In this century we live under vastly different conditions: education, elementary and technical, has opened up to

us a limitless field of action, and we are bound to expend our energies far beyond any dream of the paper-makers of past years.

It is no prophecy to say that those paper-makers who do not take advantage of technical training and applied knowledge, but continue to carry on the old empirical methods, will most assuredly be unable to compete with the scientifically controlled and technically organized mills. I feel I cannot be too emphatic in impressing upon you the paramount importance of having your manufacturing processes founded on strict scientific principles, as by so doing you shall be in a position to manufacture the best qualities of your own respective grades, and thus be able to enter into healthy competition, instead of, as is sometimes reported at present, one mill doing its best to cut in under circumstances which may not be conducive either to maintenance or improvement of qualities.

#### More Recognition of Technical Education Wanted.

In conclusion may I be permitted to quote from the last paragraph of the Report of The City and Guilds of London Institute? It stated: "It is generally recognised that, in order to meet the difficult times that lie ahead, everything possible must be done to increase the economic efficiency of the country, and for this purpose to gain the willing co-operation of all classes of workers. But it is still not sufficiently recognised how important a part the technical school can play in this direction by arousing in the student a real interest in his trade. He is brought into touch with perhaps only a small part of it in his daily work, but one of the chief functions of the technical school is to give him a knowledge of the more general principles of science underlying or connected with it. . . . The hope may, therefore, again be expressed, that manufacturers and employers will give technical colleges and schools in still greater measure, the cordial support which they so well deserve. Apart from any immediate results they may bring by way of increased skill or knowledge, they can give to the young artisan the wider outlook which will interest him more in his work. . . ." There are signs of increased interest in education generally, it is earnestly to be hoped that there will be a fuller recognition of the great importance of technical education."

#### RIORDON ROUNDS OUT TIMBER HOLDINGS.

Riordon Company, Limited, has recently acquired further timber limits in the Ottawa Valley, thereby rounding out its holdings in that area.

The limits purchased cover 1,100 square miles, and are situated tributary to the Quinze River, northern Quebec, adjacent to limits already owned by the Riordon Company. Purchase of the property, which was formerly owned by M. J. O'Brien, includes a valuable undeveloped water power on the Quinze River capable of development to over 100,000 horse power.

These limits, which are but a few miles east of Lake Temiskaming, are of unusual extent and quantity, containing a fine grade of timber and are admirably situated for delivery at low cost to the Company's pulp mill at Kipawa. Purchase of these limits still further strengthens the Riordon Company's position, placing it in possession of about 12,000 square miles of excellent located and well timbered limits, and increases its ultimate water power capacity to 250,000 horse power.

# Belgian Paper Trade Conditions

By Special Correspondence.

The rapidity of Belgium's recovery in the pulp and paper industry is shown by the following table and chart, in which it is seen that both imports and exports for the first seven months in 1920 were greater than for the whole year of 1919, the exports having more than doubled.

IMPORTS.  
First Seven Months of the Years 1919 and 1920.

Articles.	1919		1920	
	Quantity Kg.	Value Fcs.	Quantity Kg.	Value Fcs.
Wood Pulp	18,516,389	11,659,289	68,242,207	77,964,791
Total of the whole year	54,979,061	37,264,444		
Wall Paper	1,176,538	3,269,930	1,306,854	5,270,103
Board	2,561,375	2,402,740	3,000,287	4,472,178
News Paper	4,798,002	4,897,487	3,446,674	6,341,833
Non-denominated Paper	4,249,897	7,389,270	11,059,666	27,445,144
Total	12,785,812	17,959,427	18,804,178	43,529,258
Total of the whole year	24,866,832	36,857,312		
<b>Printed Matter.</b>				
Books and sheet	195,495	2,289,967	547,160	6,741,488
Books and Bound	137,453	430,794	294,853	1,829,256
News-papers, periodicals, maps, etc.	1,719,126	3,725,820	1,249,719	2,463,251
Non-denominated	357,953	1,802,241	934,046	6,905,189
Total	2,709,327	8,248,819	2,935,778	17,939,184
Total of the whole year	5,996,039	16,260,711		

Besides non-denominated paper imports for 1920 from "other countries", 6 Kg. came from Argentina, 4 from Australia, 2688 from Denmark, and 1614 from Japan (compared with 10 Kg. in 1919).

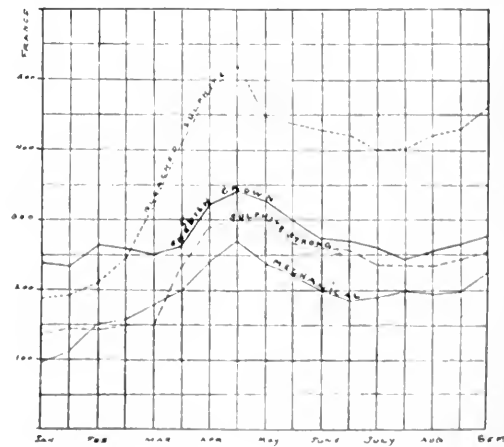
EXPORTS.  
First Seven Months of the Years 1919 and 1920.

Articles.	1919		1920	
	Quantity Kg.	Value Fcs.	Quantity Kg.	Value Fcs.
Wood Pulp	4,437,313	1,406,810	8,987,933	10,366,967
Total for the whole year				
Wall Paper	4,882	16,905	1,365,953	5,507,286
Board	13,000	6,500	263,082	692,212
News Paper	15,134	49,187	119,931	347,148
Non-denominated Paper	527,886	2,124,668	10,136,936	37,754,857
Total	560,902	2,167,260	11,885,002	44,211,503
Total for the whole year	3,956,442	12,452,005		
<b>Printed Matter.</b>				
Books and Sheet	13,802	79,394	224,399	1,317,925
Books Bound	38,453	216,768	378,803	2,010,913
News-papers, periodicals, maps, etc.	12,514	53,098	140,175	689,777
Non-denominated	16,230	87,268	149,603	1,235,337
Total	80,999	436,528	892,980	5,253,952
Total of the whole year	417,307	2,279,924		

Orders are scarce. Prices have been slightly decreased by those mills running on fine printing paper, which have been especially affected by the present definiteness. It is said that those mills and also some others working on different grades have cleared up nearly all the business on their books. Scandinavian paper is being offered at present, by middle men and jobbers, at prices considerably under those of the home market, but no transactions are being made, partly because there is some stock and chiefly because most of our wholesalers of papers are bound towards their mills, by orders placed months ago at prices to be fixed about the time of delivery. As wages, coal, and pulp are again advancing it is not likely at all that general decreases may occur and it is not probable that those mills, that have specialties to offer, will devote more and more their efforts to the export trade.

Pulp prices are very firm and have been advancing this fortnight owing to another increase of the rate of exchange. Pulp prices depend in our country chiefly on the rate of exchange as is shown clearly in the following diagram, that, for the first 8 months of this year, indicates the fluctuations of

pulp prices as compared with the rate of exchange of the Swedish Crown.



## British Trade News

(From Our London Correspondent.)

London, 5th Oct. 1920

During the past couple of weeks I have referred to the raising of new capital for pulp and paper propositions mooted in England. It is an encouraging sign that despite the menace of labour stoppage and the dark results of oppressive taxation reflected in revenue returns, many owners of mills have decided to appeal for fresh capital. Apparently the belief prevails that notwithstanding the unsympathetic attitude of workers there is still promising scope for the employment of money in industry. There is also evidence that in spite of the rumors of labor wars against the capitalists and constant alarms, intending investors have great confidence in pulp and paper as being sound for putting their money into.

### Caldwell's Paper Mill Issue.

Caldwell's Paper Mill Company, Ltd., Inver Keithings near Rosyth, in Scotland, offered ordinary shares last week to the extent of 292,993 (of £1 each at par) of which the directors and their friends agreed to apply for 120,000 at par, leaving £172,993 for public subscription. Debentures for £250,000 bearing 8 per cent, have already been raised. The directors of the mill are:—Sir Robert Carlyle, K.C.S.I., chairman of the Hartlepool Paper Mill; chairman; Lord Norris, vice-chairman; Alexander Smith, the Managing Director, of Echo Bank, Inver Keithing; Alfred William Smith, the Assistant Managing Director; Thomas McCrow, the esparto and pulp merchant, of 19 Stirling Road, Trinity, Leith; Albert Kay, Managing Director of Olives Paper Mill Company; and Colonel Simpson, a director of the Hartlepool Paper Mill and Olives Paper Mill. The mill was established in 1893 as a one machine mill primarily for experimenting in the manufacture of grease-proof papers under a secret process, and ever since the business has progressed and developed. In 1913 the mill was destroyed by fire, but a new structure has arisen since and the present plant consist of three paper-making machines and auxiliary plant, finishing, reeling, cutting and packing machinery. A fourth paper-making machine is shortly to be erected as the company is now turning out, in addition to grease-proofs, white printings, writings, bank papers, tub-sized, linen faced papers, tinted papers, and cover papers. One singular statement appears in a report on the mill. It states: The company's works are within a few yards of Inver Keithing Harbour, near Rosyth, "and occupy an excellent position for the importation of the necessary raw materials from Scandinavia and the Baltic." The present output of the mill is stated to be 130 tons of high-class paper per week, and this is expected to reach 180 when the extra machine is installed. The report on the mill further states:

(1) The British paper-making industry is at the present time in a strong position and the company has ample orders on hand.

(2) The company holds large stocks of raw materials purchased at favorable prices and is exceptionally well placed under contracts for future supplies for the next 12 months.

Turning to the values of the assets of the company I find under the heading (b) stock of pulp, raw materials, stores, work in progress and paper, as certified at 31st, August 1920 (at cost or under) are returned at £102,081—18s. 8d.

### "Bridge" Paper Mill.

A company has been formed to take over the lease, with an option to purchase, and to carry on, as a going concern, the "Bridge" Paper Mill, in Staffordshire, which was established 100 years ago. The share capital is £25,000, divided into 25,000 9 per cent participation shares of £1 each and 40,000 ordinary shares of 1s. each. In addition to receiving the fixed dividend, the preference shares are entitled to participate in 25 per cent of the remaining net profits available for dividend after deducting the bond interest and providing for the sinking fund for bond redemption. The mill manufactures mill and straw boards, in addition to leather boards and tissue paper, and a new adjunct in the near future will be the introduction of a new waterproof substitute for leather in boot manufacture. At present the machinery of the mill is not able to cope with the demands on the firm and consequently, new capital is wanted to develop extensions and increase the output. One good point about the mill is that it is situated right in the heart of industry—pottery, boot, and textile manufacturing centres. The present directors are outside the paper industry, with the exception of Mr. Edward Warden, of London, who is manager of a paper mill. Tissue paper is largely used in pottery manufacture in England.

### Sir Vezey Strong Dead.

After a long illness Rt. Hon. Sir Thomas Vesey Strong, K.C.V.O., K.B.E., Lord Mayor of London 1910-11—the year of the King's coronation—died this week. Born in the centre of newspaperdom (Fleet Street), he entered the paper industry at the age of 11 and in 1886 started business for himself in Upper Thames St., ultimately becoming head of the great firm known today as Strong, Hanbury & Co., wholesale paper merchants. Sir Vezey was 63 years of age and he was a typical John Bull, with his clean shaved chin and side whiskers. When dressed in his mayoral robes he looked the ideal Lord Mayor and played his part well. All his life he was a staunch totaler and on more than one occasion, he has been described as "John Bull—with the beer left out." The paper industry loses a valuable and valued pioneer.

### Severe Slump.

I have just received a copy of the report of the Amalgamated Society of Paper Makers, one of the old and respected bodies, which Mr. W. Dyson brought to so high a level as a workers society. The Secretary "prom" is Mr. Arthur Fowler.—Mr. Dryson having left, as reported sometime ago in the "Pulp and Paper Magazine"—and he states that trade is suffering a rather severe slump. This is attributable to unrest in the printing and coal industries. The Society, he adds, has a number of men out of work. Here we get an idea of what the mills are doing. If the mills are busy they cannot afford to keep out skilled men. Therefore, we must assume that when skilled labor is out there is a slump.

### Pulp and Paper Markets.

Quietude continues just now in the British paper industry. One could not expect anything else with a serious coal crisis overhanging mills and the uncertainty of labor contentions. Newsprint is finding a good outlet and the demand is as keen as ever. One London daily paper, which favors American journalism, states this week that newsprint will very soon go down in price. Foreign stuff may, but it is quite certain British made will not, owing to the cost of raw materials. Of course,

is another attempt to drive down prices. Indeed, half the newspapers in England today want their newsprint for little or nothing from the mill or agent. In Scandinavian circles the paper market is also dull as regards new business. For good grade papers they have plenty of work on hand.

The pulp market continues unchanged. If the rate of exchange was more evenly balanced all round, the business outlook would be much brighter. Norway showed a change in her rate recently and orders poured in to the pulp mills, but the Norwegians stuck to their prices and would not sell at a reduction. Recently some good supplies of chemical pulps have reached England from Canada. English and Scottish mills are well supplied with pulps for the present.

Price of pulps have not changed in the last week.

#### Notelets.

John Dickinson & Co., Ltd., the Hertfordshire paper mill owners, announce an interim dividend of 5 per cent, less tax, on the ordinary shares, payable October 1st.

"Recent Researches in Cellulose Industry"—being lectures by Mr. C. F. Cross—are being printed in the Royal Society of Arts Journal, London.

Spasmodic outbreaks, arising from unrest, are occurring in British mills among the workers. At Aberdeen some workers were charged with "throwing divots, cursing, swearing and shouting 'Blacklegs', etc., etc." No doubt the Scotch blood was up.—But Scotland is going "dry" we are told. Pussyfoot Johnston has visited it.

Scotland is not going "dry" in regard to tobacco, because the Union of Wrapping Papermakers (Cap Section) have presented Mr. John Dobson, of Charles Marsden and Sons, Ltd.,—one of the fine firm of mill owners— with a cigarette case as a token of great esteem, when he left England to retire to Scotland.

#### SUITABILITY OF SOUTHERN WOODS FOR PULP AND PAPER MANUFACTURE.

The U. S. Forest Products Laboratory at Madison, Wis., has frequent requests for information concerning the suitability of various southern woods for the manufacture of pulp and paper. In the South there are large stands of various species of pines including longleaf and short leaf yellow pine, scrub, pitch, loblolly, etc. These woods are characterized by having a good fibre length. However, on account of their pitch content it is not believed that they can be reduced by either the sulphite or ground wood processes of pulping to a grade of pulp to compete commercially with that made from northern non-resinous, long fibred, coniferous woods, such as spruce, balsam, or hemlock.

The various species of southern pines can best be reduced by the sulphate, or kraft, process of pulping, and the resulting pulp utilized for the manufacture of kraft wrapping paper or high test container board. These pines can also be reduced by the soda process and the resulting pulp utilized in the manufacture of grades of paper in which sulphate pulp is ordinarily used. It is possible that further work will demonstrate the feasibility of pulping these pines by the sulphate process, bleaching the pulp to a satisfactory degree of white and mixing it with short fibred sulphate or soda pulp made from other southern woods, such as the gumwoods, for the production of mag-

azine, book, envelope, or lithograph papers. The yield of pulp by the soda and sulphate processes is less than 45 per cent.

The large stands of hardwoods occurring in the South consists in part of the various species of gum wood, cotton wood, sycamore, basswood, magnolia, willow, etc. All of these woods are short fibred and, according to laboratory experience, can be most satisfactorily reduced by the soda and sulphate processes of pulping. This pulp after admixture with a longer—and stronger-fibred stock, such as bleached spruce sulphite, or pine sulphate pulp can be used for the production of book, envelope, or lithograph paper.

In view of the present abnormal situation no definite estimate can be given as to the cost of a balanced pulp and paper mill—as all cost figures available at the laboratory are based on pre-war conditions. It is the opinion of the laboratory men, however, that a balanced pulp and paper mill can not be erected at a cost of less than \$45,000 to \$50,000 per ton capacity per day. Further, before a mill of this type is erected a careful survey should be made of the economic factors, such as freight rates, markets, labor and living conditions, fuel, power and other factors upon which the financial success of the proposed undertaking depends.

#### AMERICAN CONDITIONS DEEMED UNSUITABLE FOR PLANT FIBRE PAPER.

The U. S. Forest Products Laboratory at Madison, Wis., receives frequent requests for information regarding the possible use of plant fibres, such as sugar cane, bagasse, corn stalks, cotton stalks, the various straws, etc., for pulp and paper manufacture.

The laboratory is restricted in its investigations to a study of the best means of utilizing our forests and forest products, so that little work has been done on the pulping of these plant fibres. From general experience, however, it is believed that these various fibres are not economical for pulping under present American conditions, as they offer the following difficulties in handling:

- 1.—Plant stalks, straws, grasses, etc., usually contain a large percentage of pitch, giving pulps low in fibre content and requiring high chemical consumption.
- 2.—Material of this type represents seasonal crops, so that facilities must be provided for the storage of a large volume of the stock in order to permit the paper mill to operate throughout the year. The susceptibility of such material to decay adds greatly to the costs and difficulties of storage.
- 3.—Due to the bulkiness of these materials, the digester charge is reduced, thereby reducing the yield and increasing overhead costs proportionately.

Some of these fibres, such as the straws, are being pulped at the present time for use in the manufacture of corrugated board and cheaper board products. Pulp of this nature, however, does not compare with a refined pulp such as sulphite or rag stock; it can be used only for special purposes and not in the manufacture of newsprint or high-grade paper. Plant fibres of this nature are being reduced commercially in Europe where economic conditions and the scarcity of wood permit their utilization. But under present American conditions, it is believed that such fibres can not compete commercially with wood pulp.



# PULP AND PAPER NEWS



The weekly newspaper publishers and job printers of Oxford County and district have organized what will be known as the Oxford District Press Association, with H. S. Johnston of Tillsonburg as President.

The Waterous Engine Works Co., Limited, of Brantford, Ont., have received an order from the J. R. Booth Company for one of the company's standard barking drums which will shortly be installed.

The Ontario Newspapers Corporation, Limited, has been organized and granted incorporation by the Ontario Government. The charter authorizes the company to carry on the business of newspaper proprietors with an authorized capital of \$300,000 and head office Toronto. The provisional directors are R. W. Hart, C. H. C. Leggott and E. Fitzsimmons.

Mr. George Carruthers, President of the Interlake Tissue Mills, Limited, Toronto, was one of the speakers at the annual plant dinner of the Abitibi Power and Paper Co., Limited, at Iroquois Falls, on Oct. 9th last. Mr. Carruthers spoke on the financial aspect of education as a reason why a man should increase his earning power and why he should fit in with, and cooperate in, the administration of a mill. The gathering, which has largely attended, was an enjoyable one and the addresses given were instructive and entertaining.

Paper circles in Ontario regretted to learn this week of the death of Mr. Charles E. Warwick, secretary-treasurer of the wholesale stationery manufacturing firm of Messrs. Warwick Bros. & Rutter, Toronto. For the past five years the late Mr. Warwick had been suffering from Bright's disease and two years ago he was compelled to abandon a hitherto active business career. Born in Woodstock, Ont., 56 years ago, Mr. Warwick entered the wholesale stationery business when his father founded the firm bearing his name. He had for many years been prominent in mercantile circles in Toronto. A widow, three sons and one daughter survive.

The current number of the Canada Gazette contains notice of the incorporation of the Dryden Paper Company, Limited, with a capital stock of not less than \$500,000 and chief place of business Montreal. The company is authorized to carry on in all its branches a lumber, pulpwood and paper business and the incorporators are E. Languedoc, C. Sinclair, S. G. Dixon, R. E. Allan and William Taylor, all of Montreal.

Mr. John G. Sutherland, President, and Mr. W. L. Bird, General Manager of the Fort William Paper Co. were in Toronto this week conferring with Lieut. Col. Gibson. Mr. Sutherland reported that construction work was proceeding satisfactorily on the ground wood mill but that labor conditions were not all that could be desired.

Mr. R. T. Houck, sales manager of the George H. Mead Co., Limited, Dayton, Ohio, was a visitor at the Toronto office of the company this week.

Mr. George Brian, representing the Paper Makers' Chemical Company, of Easton, Penn., was calling on the Toronto trade during the past week.

The work of installing the 140 inch trim machine in

the Interlake Tissue Mills at Thorold is proceeding satisfactorily. When completed the machine will be the largest of the kind in the world. The company will manufacture flat tissue towels along with their other specialties and a cheaper grade of toilet paper will also be turned out to meet competition in a similar line from across the border.

The ratepayers of Fort William were very nearly unanimous this week in passing the by-law granting special privileges to the Fort William Paper Company which is erecting a pulp and paper mill in that city.

With the opening of a branch factory at Kingston, Ont., for the manufacture of paper boxes and confectioners' paper goods, the F. W. Fisher Company, Limited, has added another healthy industry to that city, giving employment to a large number of men and young women. The company's parent plant in Toronto is working to capacity.

After over 39 years service with the Toronto Globe, Mr. W. Pitman Morse, Treasurer of the newspaper, has resigned to enjoy a rest. On the occasion of his retirement the staff presented Mr. Morse with a sterling silver table set and officials of the staff testified to his long and faithful service with the company. Mr. Morse joined the business staff of the Globe in 1881 shortly after the assassination of Hon. George Brown and has been in the service of the company almost continuously since that time.

## THREE RIVERS PULP AND PAPER CO.

Having successfully mined gold in Ontario, the Hollinger Gold Mines shareholders are entering the pulp and paper field through the organization of the Three Rivers Pulp & Paper Co., Ltd., whose shares are first offered to holders of the mining stock. Noah A. Timmins is president of both companies.

With the preferred, which carries a dividend of 8 per cent and is both accumulative and participating, there goes a bonus of common stock, share for share. If there is any balance of the \$4,000,000 of preferred shares that are not taken up by the shareholders of the mining company, there will be a public offering.

Backing up the mill proposition, the company has secured timber limits of 787 square miles, containing some 4,000,000 cords of spruce and balsam pulpwood. These limits are considered ample for a fifty-year supply for a mill of double the initial capacity of this, that is, 100 tons a day or 30,000 tons per annum.

Associated with the Hollinger group in this new concern are the lumber interests of John Breakey, Limited, the president of which, Denaston Breakey states that the estimates of lumber and pulpwood are correct and conservative, and that in his opinion the operations of this company will be equally as successful as those of other operating companies. A group of British capitalists interested in the paper industry have subscribed for \$400,000 of the preferred shares, and are negotiating for a contract covering their entire requirements of pulp, some 40 tons a day, at prevailing

market prices, subject to monthly revisions. These, later, may erect a paper mill on the same site.

In figuring out the element of profits the company has taken as a basis of price \$80 a ton, allowing for a readjustment from the present price that runs around \$130 a ton. On this basis the profits for a year would be about \$1,500,000 on the output of 30,000 tons, or over four times the requirements of the preferred dividends of \$320,000, leaving a substantial amount available for common stock.

This is much more conservative than some recent predictions of new company profits and apparently places manufacturing costs at \$30 a ton, which is probably not far off.

It is recalled that the Breakey people were recently reported as intending to manufacture pulp.

The directors and officials are well known mining, lumber and steel men and the superintendent of construction and operation is J. J. O'Sullivan, formerly with Geo. F. Hardy, the Northcliffe Mills and the Laurentide Company.

#### RIORDONS HONOR STEVENSON.



T. J. STEVENSON.

On the occasion of his return from an extensive European business trip, T. J. Stevenson, manager of the Riordon Sales Company, Limited, was the guest of honor at a dinner given in the Old Colony Club, Windsor Hotel, by his associates in the Riordon Company.

Carl Riordon, Geo. E. Challes and other executives of the company, as well as the entire staff directly associated with Mr. Stevenson, joined in the reunion.

During his travels, Mr. Stevenson has visited the United Kingdom, France, Belgium, Switzerland, Holland, Spain, Italy, Germany, Norway and Sweden, and he spoke in a most interesting way of present European conditions, with which his recent experiences have made him thoroughly familiar.

"The man who had his arm broken in two places, would stay away from those places," says the Safety League.

#### TO MAKE PAPER MACHINES AT PORT ARTHUR.

Mr. P. G. Chace, vice president of the Port Arthur Shipbuilding Company, announced last week the new policy of the Company in connection with the manufacture of pulp and paper machinery.

The Company will go into the manufacture of all classes of grinders, wet-machines, chippers, digesters and heavy paper making machines. The Reliance Mill and Trading Company, of New York, will handle the sales for the Company.

Mr. Chace made the following statement to the Port-Arthur News-Chronicle:

"In view of the pulp and paper business making such favorable progress at the Head of the Lakes, and with the resources in the way of wood behind this production, we believe that the time is now opportune to enter into the manufacture of pulp and paper making machinery.

"In arriving at this decision, we have been prompted and guided by some of the most successful leaders in the pulp and paper industry, and through their assistance, we were able to secure the services of probably the best known and ablest engineers and designers in North America.

"The acreage, floor space in our shops, and facilities in the way of equipment, as contained in our plant, are most favorable for the manufacture of the heavy and complicated types of machinery and equipment necessary for the successful manufacture of pulp and paper. In addition to our present foundry facilities, which include the casting of iron and brass, we have now under consideration and hope soon to start the installation of an electric steel furnace of ample capacity to not only supply our own needs, but the requirements of the surrounding country as well.

"With the opportunity at hand and the amount of business already assured us, our organization will be increased six hundred to a thousand men within a year's time. The type of labor required for this work is of the highest skilled class.

"A similar instance of just such a condition as ours is recalled by reference to one of the largest shipbuilding companies on the Atlantic coast, located in the United States, who, a number of years ago, decided to enter into the manufacture of pulp and paper machinery as a side issue to their enormous shipbuilding program, and this company today is probably the best known and largest manufacturer of high grade paper machinery in the world. The organization required on that work has doubled that required for the shipbuilding industry in their plant within a few short years.

#### THE WISCONSIN STATE BOARD OF HEALTH SAYS:

The venereal diseases, primarily, are due to a double standard of morals. No man should demand more of a woman than he is willing to give in return.

"If every man were straight, there would be no such thing as prostitution; there would be no loose women if there were no loose men."

"If every man were straight, very few children would be born blind."

"If every man were straight, there would be fewer children born diseased."

"If every man were straight, there would not be nearly so many babies born dead."

"If every man were straight, there would be fewer childless homes."



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Oct. 16.—Although there has been a distinct falling off in the demand for some lines of paper in sympathy with the skidding of prices in other commodities the Canadian paper trade stands out as the one line of commercial activity in which entire confidence is expressed for the future. Prices have not only remained firm in practically all lines but there are those who predict that the upward trend has not yet ceased. Newsprint, for instance, is expected to go to 7½¢ in the first quarter of the new year and there may be increases in other lines which may well be said to have reached their peak. The lessened demand for paper is found only in the consuming end of the trade and there is a noticeable hesitancy on the part of the printer to stock up. But the jobbers are still out after all the paper they can get and in most lines, notably book, they are unable to get their full wants supplied from the mills, which are still months behind with orders. The opinion is freely expressed in the trade that history is going to repeat itself in the paper industry and that the present period of hesitancy in buying on the part of the consuming public will be followed by a revival when it is discovered that stocks are low and under-production still exists. It will be recalled that early in 1919 trade was bad and paper jobbers had great difficulty in disposing of their stocks. Consumers held off buying on the falling market until they found themselves without supplies. Buying on a bigger scale than ever quickly set in and the trade came back to normal, to be followed by an unprecedented prosperity which has existed up to the present time. The situation at the moment is that while the printers are not stocking up, the jobbers have comparatively little coming along and there are enough orders on the books at the mills to keep the machines running for months yet. Taken all in all the paper trade does not appear to give any cause for worry as to its future.

**BOOK PAPERS.**—Jobbers report that while shipments are not coming through any more freely from the mills, there is a distinct falling off in enquiries for stock. There is a disposition on the part of the printer to hold back and not endeavor to stock up. Heretofore the printer would buy anything in the paper line he could get his hands on, and particularly book paper. His attitude, however, has changed within the past week or two and he is now buying little more than will meet his immediate requirements. Nevertheless there appears to be little slackening off in the general demand for book papers and distributors report that business is good. None of them have any stocks to speak of on hand and with the mills booked ahead until the first of the year and after, there does not appear to be any prospect of a flooded book paper market for some time to come. A big under-production is still observable in the book paper market notwithstanding the fact that travellers are finding it a little harder to place orders, due, no doubt, to the psychological effect of tumbling prices in certain other commodities. Although a falling market in a number of other lines has characterized Canadian commerce,

the only mark it has left on the paper trade is a slight hesitancy in buying, which is considered not an unmixed evil. Prices of book paper are keeping up, along with other paper lines, and it is not anticipated that they are coming down. A spirit of optimism pervades the book paper trade and jobbers do not anticipate a slump of any kind.

**WRAPPING PAPERS.**—Freer deliveries characterize the wrapping paper trade and although dealers could handle more stock if they could get it, the shortage of stock cry is not so insistent. Shipments are decidedly more liberal and the mills are beginning to advise the jobbers that if they don't want the tonnage promised they will dispose of it elsewhere. The demands on the jobbers' stocks have lessened somewhat and orders for ton lots have been replaced to some extent by half ton lots. There is no let-up, however, in the volume of business, and the trade is as prosperous as any in the paper trade. Prices remain firm and unchanged.

**GLASSINE AND GREASE PROOF.**—The market in these commodities is firm and there is a well-sustained demand for the products. The jobbers' price for glassine is 30¢ per pound for unbleached and 35¢ for bleached. Grease-proof is selling at 22¢ per pound for unbleached and 25¢ for bleached.

**TISSUES AND TOILETS.**—Difficulties in securing raw stock and the high prices thereof continue to hamper the tissue and toilet paper manufacturers although the market is firm and the prices unchanged. Canadian makers of toilet papers are beginning to be up against some slight competition from American makers who are sending in some lower priced toilet paper of an inferior quality, although the buyer is getting no better value for his money and the American competition that has so far developed is not considered formidable. The demand for all light-weight papers is well sustained but manufacturers report a great shortage of bleached sulphite pulp which is almost impossible to get.

**KRAFT PAPER AND MANILAS.**—Kraft mills, while still three months behind, report a slight falling off in demand, although they are still experiencing considerable difficulty in filling orders owing to the calls for tonnage which cannot be supplied in satisfying quantities. The lessening in demand, so far, is only on the part of the consumer and as yet has not affected the manufacturer. Whether this condition will eventually react on the mills it is not safe to predict in these days of falling prices, but at the present moment there appears to be no cause for uneasiness. Under-production is still very marked and there are no signs of future price-reductions. At the present time there is no manila on the market and if there were it would be valued higher than kraft which is now 13¢ a pound. Kraft pulp is quoted at from \$150 to \$155 a ton.

**RAG AND PAPER STOCK.**—The rag and paper stock market is extremely dull. The market in all the lower grades of paper is purely nominal and it is one in which only the buyers figure. The only hope of any immediate change for the better in prices is a

favorable settlement of the strike among the sorters in New York. Shavings and white papers are firm but there is no demand for books and the white paper market is in a moribund condition. New cotton cuttings are keeping up with a tendency to lower prices and old rags are following along the line of old papers. As one of the Toronto dealers put it: "The mills are now coming into their own."

Following are quotations on rag and paper stock :	
Per Cwt. F.O.B. Toronto	
No. 1 shirt cuttings . . . . .	\$23.00—\$24.00
No. 1 unbleached cotton cuttings . . . . .	\$17.50—\$18.00
No. 1 fancy shirt cuttings . . . . .	\$13.00—\$13.50
No. 1 blue overall cuttings . . . . .	\$11.50—\$12.50
Bleached shoe clip . . . . .	\$15.50—\$16.00
White cotton hosiery cuttings . . . . .	\$16.50—\$17.00
Light colored hosiery cuttings . . . . .	\$13.00—\$14.00
New light flannellet cuttings . . . . .	\$14.50—\$15.00
No. 2 white shirt cuttings . . . . .	\$13.50—\$14.00
City thirds and blues (repacked) . . . . .	\$3.75—\$4.00
Flocks and satinettes . . . . .	\$1.75—\$2.00
Tailor rags . . . . .	\$1.50—\$1.65
Gunny bagging . . . . .	\$1.75—\$2.00
Manila rope . . . . .	\$5.25—\$5.50
No. 1 white envelope cuttings . . . . .	\$8.50—\$9.00
No. 1 soft white shavings . . . . .	\$7.50—\$8.00
White blanks . . . . .	\$5.50—\$6.00
Heavy ledger stock . . . . .	\$3.75—\$4.00
No. 1 magazine . . . . .	\$3.00—\$3.10
No. 1 book stock . . . . .	\$2.65—\$2.75
No. 1 manila cuttings . . . . .	\$5.50—\$5.75
No. 1 print manila . . . . .	\$2.40—\$2.50
Folded news . . . . .	\$2.24—\$2.30
Over issue, news . . . . .	\$2.50—\$2.75
Kraft . . . . .	\$5.50—\$6.00
No. 1 clean and mixed papers . . . . .	\$1.75—\$1.90

### NEW YORK MARKETS.

New York, October 16—(Special Correspondence)—There is little change to report in the paper market and no feature of prominence. Demand continues narrow in comparison with that existing not long ago, consumers at present limiting their buying almost solely to supplies immediately needed. The market has not weakened further, however, as regards prices. Manufacturers as a general thing still have a large volume of unfilled orders on file and are running their plants at maximum or close to full capacity in completing these commitments. No one is cutting prices to any material extent. There are cases that crop up from time to time where this or that manufacturer or jobber has reduced quotations a bit to move a certain lot of paper, but prices on the whole are being maintained at pretty firm levels. Buyers are not operating in the paper market for the same reasons they are keeping out of other commodities, namely, that they have come to the conclusion that a period of slow operations will make for better business conditions in general and not to stabilize values on proper levels.

Developments have effected a decided change in one end of the paper industry, and that is in raw material. Paper manufacturers are pursuing very much the same policy in their buying of raw stock as are consumers of finished paper in their current buying of the product of the paper mill. Demand for all kinds of papermaking material has continued to ease until it is very close to a standstill now. Paper-

makers apparently are making sure that in the event of a decline in paper prices they will not be obliged to suffer heavy losses on large stocks of raw material. The policy followed by the average paper manufacturer at present is to use up such raw material as he has on hand, liquidating stocks to as low levels as it is wise to do so and to keep from purchasing fresh supplies until the need for them is pressing. This has resulted in most mills remaining very much out of the market for wood pulp, rags, old papers, rope, bagging, etc., and the markets for these commodities have developed an exceedingly quiet tone. That mills will soon appear again as buyers goes without saying, for reserve stocks of raw material cannot last indefinitely, but at the moment there is but a slight call emanating from consuming quarters and those few buyers actually operating are managing to get supplies at attractive prices—prices which in numerous instances represent sharp recessions from the levels prevailing only a short time ago.

The newsprint market retains its steady tone with no change in quotations noted. Spot lots of print paper in standard rolls are selling at from 10 cents a pound upward, with occasionally a purchase reported by some publisher at 9.75 cents. The contract basis is maintained at 6.50 cents, but there is talk in the trade concerning pending important developments in this connection in the near future. What these developments are to be is a question regarding which no one will commit himself, but according to the gossip, it is probable a reduction in price by some of the leading producers will be made.

Book papers are firm in price and are moving into consuming channels in a consistent way. There is no semblance of easiness in quotations, and available supplies show no signs of becoming larger. In fact, buyers seeking extra tonnages of book papers are meeting with little success; mills in general being sold up for some time and having but odd lots of paper to dispose of. The coarse paper market rules steady although demand is a good deal slower than it has been in a long time. Consumers of wrapping and tissue papers evidently are making their contract supplies do them at present without the necessity of placing additional orders.

The board market is a little easier. Due to a sharp decline in waste paper costs, some mills are accepting orders for board at slightly lower prices, sales of news board at \$115 a ton and of plain chip board at \$105 having been recorded. There are no indications of any severe break in board values, however, and the probabilities of such a happening seem slim while mills still have the amount of unfilled business on their books that they now have.

GROUND WOOD The ground wood market is moving along in an even and peaceful state without much occurring to disturb its surface. Demand is largely confined to spot tonnages of pulp needed by consumers for immediate use, and yet there is sufficient buying to sustain prices at a quotable range of \$125 to \$130 per ton at producing mills for spruce ground wood of prime quality. There are no signs of available supplies increasing and mills are said to have little output to reserve for winter use, thus indicating that consumers are taking the great bulk of the present production. Everyone is bullish con-



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cerning ground wood, at least everyone on the selling end of the commodity. It is generally felt that with grinders having little surplus stored up that the winter will see higher prices unless the paper situation reaches a point where the consumption of mechanical pulp drops far below prevailing tonnage.

**CHEMICAL PULP**—About the only feature in chemical wood pulp is the continued arrival of fairly large supplies from Scandinavia. Several heavy shipments have reached New York this week, and it can be said there is more imported pulp being offered in the market than in a long time. Prices in general are holding moderately steady. Sulphite shows no recession and is at best difficult to procure in sizable amounts, which also holds true of soda pulp. Kraft is the easiest grade and is being offered at reduced prices, Scandinavian kraft of good quality being available at 7.25 cents a pound and less and domestic kraft at 6.50 cents.

Arrivals of foreign pulp at the port of New York this week included 15,178 bales from Sundsvall, 850 bales from Gothenburg, 596 bales from Osaka, and 700 tons from Haugeund.

**RAGS**—There is little life to the rag market and prices on old rags continue to sag. Sales of roofing rags have been recorded at as low as 1.70 cents a pound at shipping points, and reports have averred that some mills have bought at even lower figures. Old thirds and blues are offered at 4.25 to 4.50 cents for repacked stock and old whites at 13 cents for No. 1 repacked material. New cuttings are holding their own and buyers find it necessary to meet quoted prices to obtain such grades. A threatened strike of clothing makers is a sustaining factor in the new rag market, dealers being hesitant to sell for cheaper figures in the fear that production will be drastically curtailed by the strike of cutters.

Imports of foreign rags at New York during the current week included 453 bales from Rotterdam, 218 bales from London, and 250 bales from Oran.

**PAPER STOCK**—The market for old papers is in a very unsettled condition. Consuming mills for the most part have retired as buyers and are keeping almost entirely out of the market and prices are dropping with marked rapidity. Coupled with this, a strike has been instituted by collectors and handlers of old paper in New York City, who claim they are unable to operate at a profit under prevail-

ing market prices and who therefore have stopped producing stock, presumably with a view of advancing prices. It is next to impossible to quote accurate prices. There is not enough business passing to establish values and about the only quotations obtainable are those named by dealers as asking figures from mills. Folded newspapers are to be had at 1.60 to 1.70 cents per pound f.o.b. New York and No. 1 mixed papers at 1.35 to 1.45 cents. Few mills evince a desire to buy even at these figures, however, and the probabilities are purchases can be effected at cheaper prices. Old books and magazines are going abegging at 2.75 cents at shipping points, while No. 1 old kraft paper is freely offered at 5.50 cents and white blank news cuttings at 5.75 cents.

**OLD ROPE AND BAGGING**—The market for old bagging is dormant and prices are mainly nominal at around 2.25 cents for No. 1 scrap bagging, 1.15 to 1.25 cents for roofing bagging and 2.75 cents for gunny. Old rope is steady and moving in fair quantity at 6 cents per pound at shipping points.

Receipts of foreign rope at New York this week included 49 bales from Rotterdam, 143 coils from Christiania, and 198 coils from Hull. There were no imports of bagging.

#### SAFETY WORK AND INDUSTRY.

To-day, accident prevention is the one non-controversial subject in industry as both employer and employee are interested in preventing accidents. Compensation costs are a big item in modern industry and yet both employer and employee would be better off if there were no accidents. Compensation at its best can never replace a limb lost nor can it bring back a life lost in industry. Manufacturers in England and the United States have come to realize the importance of accident prevention and are getting very substantial results by placing this feature of their work on a strictly economic basis.

Compensation is a substitute, accident prevention is the "real thing". As far back as the fifth century, compensation in money was paid for personal wrong. The freeman's life and the freeman's limb each had, under this system, its legal value. An eye for an eye and a limb for a limb or fair damages. Accident prevention means whole bodies and lives saved. Accident prevention should win the day.

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and wood pulp, phonographs and graphophones, tobacco piles, refrigerators and kitchen cabinets, ships and boards, toys and games, turpentine and rosin, washing machines and clothes wringers, wood distillates, artificial limbs, professional and scientific instruments, handles, clocks, playground equipment, printing material, trunks, shuttles, spools and bobbins, firearms, pulleys and conveyors, patterns and flasks, pumps and wood pipe, tanks and silos, bungs and faucets, brooms and carpet-sweepers, paving materials, pulpers' woodwork.

That list will give some idea of the importance of the campaign for a national forest policy. — Chas. Lathrop Paek, in "Disson Crucible."

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# Pulp and Paper Magazine

## OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

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### TABLE OF CONTENTS

#### Editorials:

Private enterprise or public utility? . . . . .	1105
Bring the ocean to Port Arthur . . . . .	1106
Cobwebs . . . . .	1106

#### Special Articles:

Paper-making materials of the Philippines . . . . .	1107
Pulping of Jack Pine . . . . .	1110
The greatest conservation of all . . . . .	1111
Regulations for cutting pulpwood on Dominion timber berths . . . . .	1115

#### Miscellaneous Information.

Mutual telepathy . . . . .	1112
Handle rolls carefully . . . . .	1118
Quebec planting 3,000,000 trees . . . . .	1119
Review of recent literature . . . . .	1120
T. A. P. P. I. plans library of paper-making . . . . .	1122

#### News of the Industry.

Franklin Weston dead . . . . .	1109
Pidgeon River Lumber Mill destroyed . . . . .	1109
Price Brothers' capital \$42,671,000 . . . . .	1112
Ontario settlers making money on pulpwood . . . . .	1112
German paper mills in very bad condition . . . . .	1113
Safety Week campaign in Ontario . . . . .	1114
Canadian mills in sound position . . . . .	1114
Valuable timber limit sold . . . . .	1116
British trade news . . . . .	1117
Paper prices in Sweden . . . . .	1118
Future price of paper . . . . .	1118
National forestry program approved by New York Conference . . . . .	1119
The late Mr. John Ford . . . . .	1122
Pulp and paper news . . . . .	1123
Clarke Bros.' mill doubled in size . . . . .	1124
Improvements in Abitibi finishing room . . . . .	1124

#### The Markets.

Canadian trade conditions . . . . .	1125
New York markets . . . . .	1126

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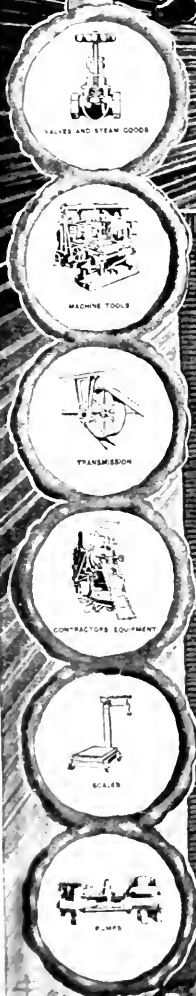
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# EDITORIAL



## *A PRIVATE ENTERPRISE OR A PUBLIC UTILITY?*

In a recent number of the Pulp & Paper Magazine mention was made of the possibility of the Government of Ontario establishing a pulp and paper plant. In these days when there is so much discussion of public ownership of public utilities we would naturally expect that the field for government operation should be limited to those industries which must of necessity be practically monopolies. Such industries we recognize as street railways, telephone and telegraph and postal organizations, water works, light and gas companies and possibly railways. The farther we get, however, from purely public service corporations as serving municipalities, the farther we get from the probability of efficient operation and the lack of serious interference with the development of resources, the growth of industry and the furnishing of efficient service at reasonable cost without burdening with deficits a portion of the community only indirectly, if at all, served by such activities. Even the operation of strictly municipal monopolies has not always been accomplished successfully.

It is not so long a time since the utilization of prison labor in competition with legitimate private enterprise, was a matter of public consideration and discussion. This practice fortunately, has now mostly disappeared it having been recognized that such procedure was entirely unfair to honest citizens and that advantage was being taken of conditions which gave the state certain opportunities that could not be available to the individual concern on which the community really must depend for its products. The resources available to the prison authorities is human labor, whereas the resources at the disposition of a government are those of nature such as minerals, water-powers, forests and fisheries. We do not hear any suggestion of our governments here, going into the mining business or the fishing business so why should a province so much as consider entering the pulp and paper industry? The case is similar to the employment of prison labor except that here the government would be employing a natural resource of material things instead of the employment of human labor. In the case of the prison, there is a valuable moral advantage in keeping the unfortunate inmate busy. This furnishes an opportunity of improving his ability to earn his own living and enables him more easily to retain his self-respect. His energies must be employed and if they can be di-

rected into productive effort it is a good thing, and there are ways of absorbing the product without danger to the gainful occupations which must engage the energies of those outside the prison walls.

The natural resources of a province, the raw material of the forest and the latent energy of the waterfall, should be put to use in such a way as to furnish revenue to the people who own these resources. This could be done in all fairness, and at the same time encourage rather than discourage the ambition of the people whose energy and industry makes for the prosperity of the whole province.

It is likely to be argued that the province is already operating a small pulp mill so that it would only be natural to extend this activity to make more extensive use of the people's inheritance. Ontario owns a pulp mill, only by the accident of its being a part of the legacy that fell to the Hydro-Electric Commission.

Previous experience with government operated industries, is that they have usually been extravagant in the extreme and have failed hopelessly to return to the people the product, the employment, or the profit which should derive from the exploitation of resources and opportunities. In fact there is a situation in Ontario right now which illustrates the fallacy of attempting to engage in an industry which has no parallel at least in Canadian history for the soundness, rapidity of growth, and beneficial return to the country that has accompanied the development of the pulp and paper industry. We mean the lack of power which should be available through the government controlled organization that is supposed to develop the water-powers of the province for the benefit of Ontario industries. There is right now a shortage of electric power which must have been foreseen and which has retarded the growth of the very industry which someone has been bold enough to suggest as a field for government activity. The establishment of a paper mill has been held up for several years on the sole excuse that the power to be used had been contracted for with the Government Commission and is not even yet forthcoming in sufficient quantity.

It would be exceedingly unwise both economically and politically for the government of a Canadian province to engage in the manufacture of pulp and paper. The inevitable end of such a course will be a prison-house industry with political appointees running even the envelope and box factories and publishing our newspapers. The government has sufficient

control of the industry through its ownership of the forests and water-powers. It is possible by a judicious use of its power in these respects not only to encourage the growth of the industry but to prevent illegitimate enterprise and to furnish the people with a substantial and continual source of income.

#### BRINGING THE OCEAN TO PORT ARTHUR.

At the present time there is under consideration by a joint commission representing the United States and Canada, a project that will doubtless be of the greatest interest to the pulp and paper industry. We refer to the plan for deepening the canal system joining the great lakes with the lower St. Lawrence River. The matter has its opponents as well as its advocates. The opponents of the scheme seem to be basing their argument almost entirely on the effect that such a water way would have on their own local interests. For instance, in Boston there is opposition because of the fear that if successful, such a scheme would diminish the importance of this New England port as an ocean shipping point. On the other hand, cities along the great lakes, both in Canada and the United States, are naturally favorable to the idea because of the unquestioned advantage that such a water route would be in assisting them to market bulky and heavy commodities, chiefly farm products.

Along the route which would begin half way across the continent, there are several points from which pulp and paper might be shipped. For instance we have Port Arthur and Fort William, which are not only already important store houses for the ever increasing grain crop of the Canadian Prairies, but which are also coming very rapidly into prominence as a centre of pulp and paper manufacturing. In this vicinity the Port Arthur Pulp and Paper Co., has been in successful operation now for several years and before another twelve months have passed we shall see the Fort William Paper Co., Nipigon Pulp and Paper Co., and the Kaministiquia Pulp and Paper Co., in operation if all their plans mature as successfully as present conditions foretell. It is possible also, that these Twin Cities may some day be the outlet for straw boards and other pulp and paper products from the resources of the Prairie provinces.

Coming farther east, we find the Spanish River Pulp and Paper Mills at Sault Ste Marie and at Espanola and Sturgeon Falls, Ont., which points would be within easy distance of loading points for ocean going vessels. Mills in Northern Ontario, which would include the Spruce Falls Pulp & Paper Co. (now in process of construction), The Matagami Pulp & Paper Co., The Abitibi Company, and any others that might in the future be located in Ontario's pulpwood areas, would find a much shorter railway haul to water transportation than is available at present. There is

also the important paper producing centre which has been built up on the Niagara Peninsula and which could almost load its product from the mill directly to the vessel.

The scheme is an enormous project and will prove an expensive one, but like the Panama Canal, it will no doubt prove its value in several ways. In these days of increasing efficiency in every possible way, the expenditure of millions of dollars is examined in many cases for the possible saving of may be a few cents per unit of product. Based on the enormous tonnage that is already passing up and down the St. Lawrence and Great Lakes system and estimating as it is possible accurately to do, the probable increase in tonnage which such facilities would afford, the advocates of the scheme confidently prophesy great success for such improvements as are proposed. Not only then will Canada and large sections of the United States benefit by such a water-way through the more immediate connection of inland shippings points through the many lanes of ocean travel with the American and Trans-Atlantic ports, but great benefit would also be derived through the possibility of bringing them closer to many products from over-seas.

Besides the unquestioned advantages to transportation, the improvement of the St. Lawrence canal system through the erection of dams and locks would give an enormous increase in available electric power. The advantage of this is the more evident and the more important when the saving of coal is considered. This would be an enormous asset to the Dominion through decreasing the dependence of Canada on the United States for fuel. The conversion of potential water power into available electric power, would also tend greatly to increase Canada's importance as a manufacturing country, although it should, of course, be remembered that a proper proportion of power so developed would belong to the United States.

As far as the pulp and paper industry is considered, it seems to us highly advantageous that the proposed improvements in the St. Lawrence water-way be carried out.

#### CORBWERS.

The Altoona pastor who declared that "the eight-hour man, with a sixteen-hour wife needs to unionize the home" contributed a valuable thought.—Pittsburgh Gazette-Times.

The value of Canada's crop of the five principal grains is estimated at more than \$900,000,000.

The Government of Ontario issued a formal proclamation approving of Safety Week for the Province. The results were very gratifying to the Safety League and others who helped the good cause.

# Paper-Making Materials in the Philippines

(From the Journal of the Royal Society of Arts, August 20, 1920.)

The Philippine Islands produce an abundance of fibres and other raw materials for the manufacture of paper pulp on a commercial scale, but at present none of these is being utilised for this purpose. So far as is known, no paper has ever been made in the Philippines except for experimental purposes. The country also contains plenty of the raw materials required for the manufacture of the chemicals used in paper pulp making, but none of these chemicals is now being produced locally.

More than a decade ago, Mr. G. F. Richmond, for several years attached to the chemical laboratory of the Philippine Bureau of Science, made a very careful survey of the materials available in the Philippines for the manufacture of paper pulp, but, according to a report by the U. S. correspondent at Manila, no practical use has yet been made in the islands of these valuable data.

The experiments made by the Bureau of Science were undertaken with the object of determining the commercial availability, for paper-making, of the fibres from members of the plantain family, such as abaca (manila hemp), banana, and plantain; of maguey (Agave cantala); of certain palms; of bamboo; of grasses; of certain woods; and of other less important plants.

**Bamboo.**—Of all the materials for the manufacture of paper found in the Philippines, the bamboos are the most important, considered from every standpoint. Not only is the paper made from bamboo of excellent quality, but a constant, adequate, and accessible supply of this material could be made available for a paper or pulp factory more readily than could such a supply of any other material. Its rapidity of growth is an important item among the various qualities that render bamboo valuable as a paper-making material. Experiments were made with the two most important and widely-distributed bamboos. These are the common, thick-walled variety (*Bambusa blumeana*), and the thin-walled, dwarf bamboo, also known as cana bajo, of the genus *Schizostachyum*.

The thick-walled variety is that commonly employed for building purposes throughout the islands. It is planted as a crop along the river bottoms of the Pampangan plain, on Luzon, and in other sections of the Philippines as well. Propagated from cuttings, the plants are set out in rows from sixty to ninety centimetres apart. Marketable culms are produced in from one to two years.

The cana bajo, or dwarf bamboo, is that employed throughout the Philippines for the manufacture of woven products used for furnishing the interiors of nipa houses and for other purposes, such as the "sauale, quisame," and "amatong". The cana bajo is found almost entirely within the forested regions of the country and is a veritable forest pest. It is never cultivated, but is cut without restraint in the forest regions to prevent its deleterious effect on forest growth.

In the Province of Bataan there are two contiguous areas of cana bajo, one of them containing 1,200 hectares (hectare = 2.47 acres), 800 hectares of which are covered with a dense stand of cana bajo. The other

area includes about 650 hectares, of which over 40 per cent. is covered with this variety of bamboo. Small areas of cana bajo are found in the same province along the Bamban, Buasao, Pimlot and Bacan rivers, in the basin of the Colo River, and in the basin of the Mababo or Balsic River. Some of these areas contain a higher percentage of timber trees than do others, and are, consequently, less thickly studded with bamboo. In an average stand of this variety of bamboo there are about 9,000 culms to the hectare. An ordinary green cane weighs 7.2 kilos, and an air-dried cane, without the nodes, weighs 3.75 kilos. A hectare would, therefore, produce about 33.75 metric tons of dried material. Mr. Richmond calculated from his experiments that two metric tons of air-dried material would produce about one short ton of pulp. The yield of pulp would consequently be approximately seventeen tons to the hectare, or nearly eight tons to the acre.

The experiments made by Mr. Richmond developed the following important facts in respect to bamboo as a paper-making material:—

1. The dwarf bamboo (cana bajo) is better than the variety used for building purposes, in that it yields more unbleached pulp and requires less of the bleaching agent to give the best results. The structural bamboo requires from 20 to 25 per cent. of bleach to give but poor results, but a satisfactory white is obtained from dwarf bamboo with from 10 to 20 per cent. of bleach. This compares well with the results obtained from straws of various kinds.

2. A well-digested pulp is obtained from bamboo by the use of from 10 to 20 per cent. of caustic soda, calculated on the gross weight of the stems.

3. The time required for digestion, the pressure and the temperature employed are materially less than those required in making pulp from soft woods by the same process. In fact, in these particulars, bamboo compares favourably with straw and similar materials.

4. Both the sulphite and soda processes may be employed in working up cana bajo. By the former process, fully 50 per cent. of unbleached pulp may be obtained, and that, with the use of much less sulphur than is necessary for the making of wood pulp. By the latter process 43 to 45 per cent. of air-dry, unbleached soda-pulp is obtained. The use of caustic soda is recommended for bamboo because of certain difficulties to be overcome in the use of the sulphite process. The results described were obtained by the use of caustic soda under the following condition: (a) Upright cylindrical stationary digesters; (b) direct live-steam heat; (c) 15 to 20 per cent. of 76 per cent. caustic soda, calculated on the air-dry weight of the raw material; (d) a duration of cooking of from four to six hours; (e) a maximum temperature 160 deg. C. (320 deg. F.) corresponding to a steam pressure of 45 kilos.

5. Pulp obtained by the sulphite process is not light enough in colour to be mixed with mechanical wood pulp in the manufacture of newsprint paper. It is entirely suited in point of colour for use as a wrapping paper. But it is too valuable, by reason of its fibre, to be used for wrapping paper or for the making of newspaper stock. The strength of bamboo fibre makes

it specially adapted to the manufacture of book paper and certain grades of writing and lithographic papers. For these purposes it may be used alone or mixed with rag or sulphite wood pulp.

6. If the bamboo pulp is to be used in the making of book and lithographic papers, the soda process should be employed in its manufacture, because bulk, softness and opacity are the chief features of soda pulp. This pulp bleaches to an excellent white with from 12 to 15 per cent. of bleaching powder. The resulting sheet is more bulky than that from wood pulp and possesses a strong fibre 2.5 to 3 millimetres in length—longer and narrower than spruce fibres—and a good felting capacity.

**Abaca or Manila Hemp.**—The Philippine Archipelago is the home of abaca (manila hemp), the source of all materials from which the genuine Manila hemp paper is made. The plant (*Musa textilis*) is a species of wild banana, of which there are several found in the Philippines. The fibre from this plant is the world's premier cordage material and comprises the chief article of export of the Philippine Islands.

Abaca waste, available for paper-making, is of two kinds, namely, that made up of old worn-out rope, gummy sacks, waste thread, and binder twine made from the fibre; and the true abaca waste, i. e., the fibre that is missed in the stripping of abaca or extracting the fibre from the stalk of the plant. There is very little of the former to be had in the Islands. When abaca waste is mentioned in the Philippines, the term signifies that portion of the fibre that is missed or thrown aside with the stalk pulp at the time of, and in the process of stripping the fibre or extracting it from the plant, either in the hills or on the plantations where it is grown.

Abaca, the fibre extracted from the plant of the same name, is taken from the petioles or sheath-like leaf stalks, which, wrapped one about another, form the stem or trunk of the plant. The stripping process consists of separating the fibre from the cellular matter of the petiole.

From this process two kinds of waste material are obtained, both of which are of value in paper-making. One of these is called fibrous waste, and the other semi-fibrous waste. The former is made up of the broken, tangled, or lost but clean fibres mixed with strips or bands of fibre aggregates from which the cellular and incrusting matter has not been entirely removed. The fibre contained in this waste has all the qualities of the fibre that is recovered by the stripper and subsequently employed in the manufacture of cordage. It is therefore identical with the fibre contained in rope waste, well known among manufacturers of paper. There is this difference, however; this fibre is fresh and has not suffered the deterioration of age.

The semi-fibrous waste resulting from the process of stripping abaca is due chiefly to the method by which the stalk of the plant is made ready for the stripping process. The plant is prepared for hand stripping by cutting off a portion of each end of the stalk to facilitate the removal of the petioles. Several of the outer of these are usually discarded on account of being bruised and discoloured. The fibre which is recovered as the abaca of commerce is contained chiefly in the outer surface of the petiole. The inner surface of the petiole and the portion between the two surfaces are made up, for the most part, of cellular matter, although they also contain much fibre of a

lower tensile strength than that contained in the outer surface.

After the petiole has been removed from the plant stalk, preparatory to stripping by the hand process, ribbon-like strips are peeled from the entire length of its outer surface. Only these thin, fibrous ribbons are submitted to the hand-stripping process. All the remainder of the petiole is discarded. As already pointed out, this discarded portion, while containing chiefly watery, cellular matter, also has much fibre that is valuable, though never recovered by the hand process of stripping. This cellular portion of the petiole, the discarded outer petioles and the end ends of the stripped petioles make up the semi-fibrous waste of abaca.

The habitat of abaca is in southern Luzon: the Provinces of La Laguna, Cavite, Batangas, Albay, Ambos Camarines, and Sorsogon; Samar and Leyte and southern Mindanao, chiefly. A mill situated anywhere in the islands would require a more or less considerable haul for most of its supply of abaca waste. It would also have to solve the problem of collecting the waste in the various regions where it is produced. Undoubtedly this would be an easy matter. Once abaca growers knew that there was a market for the waste at a price to leave a reasonable margin of profit over the cost of baling and collecting, the waste would be taken care of as systematically as is now the case with cordage fibre. In fact, a considerable amount of this material has been collected and exported from the Philippines at different times.

The semi-fibrous abaca waste, owing to the length of time, the pressure and the strength of caustic soda required to remove the cellulose matter, cannot be used profitably in the manufacture of the better grades of paper. But this material might readily be manufactured into wrapping paper of the sort in which strength and cheapness are of more importance than colour, by the process employed in working up jute—that is, by the use of lime, cooking under pressure, and partial bleaching.

**Grasses.**—Grasses of several varieties have long been in use for the manufacture of paper stock. Perhaps the most widely known of these is the esparto grass (*Stipa tenacissima*), for many years an article of commerce in the Mediterranean countries. This grass has been employed in some of the mills of Europe for many years. In India, the Bhabar grass (*Ischaemum angustifolium*), which yields a paper but little inferior to that of esparto, is very generally in use. The Munj grass (*Saccharum sara*) and several other grasses of the same species are constantly used. The paper industry of India is founded principally on these grasses and has become very extensive.

Mr. Richmond experimented with two Philippine grasses, cogon (*Imperata exaltata* Brong), and Talahib (*Saccharum spontaneum*), and found each to be an important source of paper stock. Cogon grass grows from two to four feet in height, and is found in even stands on open lands, foot hills, and low mountains in almost every part of the Philippines. It is broad-leaved, gregarious, and thrives with but little moisture on almost any sort of land. In many sections of the Islands, where nipa is not to be had, the natives rely on cogon grass roofing and siding for their houses.

Cogon grass is found in abundance in the central plain of Luzon on most of the open land. In the Province of Tarlac, between Capas and Concepcion, there is a good stand of cogon grass covering a level area of abandoned rice and sugar land. The grass on this

area is usually of good stand and quality. Throughout Tarlac Province and, to a less extent, in the adjoining provinces, there are large areas of open land covered with cogon grass of good quality. Cogon grass is also abundant in the Visayan Islands.

Cogon grass is not jointed. This quality is regarded as of great advantage in the matter of making paper pulp. Its yield is from 5 to 10 per cent. more than that of cereal straws, and it is more easily pulped with a smaller proportion of caustic soda. It has the further advantage over cereal straws that it can be harvested just before it is ripe, a period when it gives the best results. Cogon is easily prepared for digestion, and requires no preliminary cutting down after being dried, hand-picked, or machine cleaned.

Talahib (*Saccharum spontaneum*) is a coarse jointed grass growing from six to ten feet tall. It is gregarious, and springs in tufts from stout underground root stalks. Talahib is often confounded with cogon grass. It is very different from the latter, however, in both its appearance and habits of growth. Talahib thrives best in low, moist land and flourishes in river valleys and areas subject to annual floods.

This grass generally occurs with or near cogon grass, growing vigorously in the wet places where cogon does not do so well, and being of a poor variety on the uplands where cogon thrives well. It is difficult to get rid of. Cutting and burning has but little effect on it other than to increase its yield and quality. Talahib is related to the "*Saccharum sara*" (the Munj grass of India) and "*Saccharum officinarum*" (the sugar cane of tropical countries).

An experiment carried out by Mr. Richmond with a small quantity of talahib fully matured, with entire stems and leaves, gave as result a percentage of 53.9 of cellulose.

**Bananas and Plantains.**—Plantains (*Musa paradisiaca*) and bananas (*Musa sapientum*) contain much fibre that might be utilised in the manufacture of paper stock. These plants abound almost everywhere in the Philippines. Probably close to 100,000 acres are planted to them. The fibre from them has not the tensile strength of abaca, but this is considered by Mr. Richmond an advantage when the fibre is to be employed in the manufacture of paper pulp. Nearly 20,000,000 bunches of fruit are gathered yearly in the Islands from these plants, and there are, therefore, a like number of full-grown stalks, which annually go to waste, since practically no use is now made of them. The figures do not include the wild non-edible plantains, which are common throughout the Philippines and which might be utilised in the making of paper stock.

The chemical investigation of plantain fibre carried out at the Bureau of Science showed a percentage of 68.21 of cellulose. There appears to be no good reason why a plantation of bananas might not yield a profitable revenue from its fruit, and at the same time supply a pulp mill with the stalks discarded when the fruit is harvested. At the present time no bananas are exported from the Philippines, nor is the domestic market as well supplied as it should be, considering how valuable the fruit is as an article of diet.

**Maguey Waste.**—Maguey (*Agave cantala*) and sisal are being extensively planted in several sections of the Philippines. These plants yield a fibre that is well known to the cordage world. This fibre is extracted by retting at present, but a movement is on foot to revolutionise the methods of recovering it by the intro-

duction of machines. When maguey and sisal fibre is extracted by machinery there is a considerable quantity of waste that is comparable to abaca waste. The maguey, owing to the nature of the leaf of the plant, is considerably more bulky than abaca waste.

**Other Materials.**—Bowstring hemp (*Sanseveria zeylanica*) is found in many parts of the Archipelago. It is not, however, of commercial importance. It has possibilities and might be cultivated for its fibre, which is not unlike that of maguey.

Coconut coir (husk fibre) might be produced in abundance in all the coconut regions. At the present time this by-product of the coconut industry is almost entirely neglected. It might be utilised very profitably in the manufacture of paper.

The leafstalks of the nipa palm contain valuable paper substance. At present little or no use is made of these, though a vast amount of the nipa leaf is used in almost every section of the islands for thatch and siding for houses.

The buri palm is widely used in the manufacture of hats and other handicraft products, and yields an immense amount of waste in the process of extracting the material utilised for these purposes. No small part of this waste might be employed in the making of paper stock.

The milling waste of certain soft Philippine woods is known to be valuable as a source of paper stock. Mr. Richmond made successful experiments with lanan, kupang, and similar varieties.

It is not conceivable that any of the minor sources of paper pulp mentioned above would alone yield enough material to keep a mill in operation, but, nevertheless, they are not altogether negligible at a time when the world appears to be facing a shortage of such substances.

**Raw Materials for Paper-Making Chemicals.**—It is the opinion of the Director of the Bureau of Science that caustic soda, sodium sulphite and the bleaching powder required in the manufacture of paper could be manufactured in the Philippines if there were a demand for them. At present all such chemicals are imported.

#### FRANKLIN WESTON DEAD.

Franklin Weston, aged 51, chairman of the Board of Directors of the Byron Weston Co., Dalton, Mass., died at his home in Pittsfield, Mass., Friday, September 24th.

Mr. Weston was born in Dalton, August 13th, 1866, the son of the late Lieut. Governor and Mrs. Byron Weston. He was educated at Greylock Institute in South Williamstown, Mass., and at Phillips Academy, Andover, Mass. From there he entered his father's mill in the summer of 1887, and worked from the bottom up. Having acquired a practical knowledge of paper making, he entered the business, which his father had established in 1863. In 1892 the business was incorporated, and Franklin Weston was then elected treasurer. Upon the death of his father in 1898, he was chosen president, and held that office until February 7th of this year.

#### PIDGEON RIVER LUMBER MILL DESTROYED.

The planing, and finishing mill of the Pidgeon River Lumber Company at Port Arthur was destroyed by fire October 17. The loss is upwards of \$100,000. The lumber yards were saved. It will be recalled that this company has applied for a pulp wood limit in order to build a pulp mill.

## Pulping of Jack Pine

By F. I. RITCHIE, Manager Wayagamaek Pulp and Paper Co. Ltd., Three Rivers, Que.

Some years ago the Wayagamaek Pulp and Paper Company Limited, Three Rivers, Que., was equipped with complete apparatus for the purpose of experimental pulping of all the different species of wood.

Experiments have been systematically carried on for a number of years with the object of discovering what different species of wood were suitable for the different qualities of pulp required for the manufacture of all kinds of paper.

In the provinces of Ontario and Quebec there are enormous tracts of land timbered almost exclusively with what is known as Jack Pine, also called Banksian Pine, or Cypress.

For this reason, it was important to ascertain if Jack Pine could be used for the manufacture of sulphite pulp and ground wood, in spite of all the prejudice against its use for this purpose.

A preliminary examination of Jack Pine, with regard to its resin content seemed to indicate that the resin was not present in quantities which would prohibit its use for the manufacture of sulphite pulp or ground wood, although Jack Pine seems to have had to carry the blame for all the pitch troubles which all paper mills suffer from, more or less.

If Jack Pine is cooked in a mixture with other wood, trouble is quite likely to result, because Jack Pine apparently requires a stronger acid and a longer cooking time than other species of wood.

If, however, Jack Pine is cooked alone, the company's experiments, as well as those reported below, would indicate that Jack Pine will produce a sulphite pulp which is in all respects equal to Spruce Pulp. The fibre from Jack Pine was found to be about .25 mm. longer than Spruce fibre, which will make it particularly suitable for newsprint.

Some years ago, by special arrangement with Geo. McDougall, of the Jacques-Cartier Pulp & Paper Co., of Pont Rouge, Que., the Wayagamaek Pulp & Paper Company Limited shipped a quantity of Jack Pine to be pulped into ground wood at the Pont Rouge plant.

The pulp obtained from this wood proved to be as good as, if not better than, anything that could be purchased on the market. The Wayagamaek Pulp & Paper Company would like, therefore to call attention to the fact that from all the experiments made, there is no evidence of excessive pitch which could be traced to the use of Jack Pine.

By arrangement with Messrs. Arthur D. Little Inc., of Cambridge, Mass., sulphite cooking experiments were performed at their laboratory and the Wayagamaek Pulp & Paper Company have pleasure in publishing the principal results with the consent of the Arthur D. Little Inc., in the hope that the facts will be of interest to the industry. It should be carefully noted that the figures obtained from these experiments seem to demonstrate that the results obtained from the measurements of fibre length and content of pitch for Jack Pine as against Spruce, show that the Jack Pine is fully equal to Spruce in every respect.

The following is an extract of the detailed report by Arthur D. Little Inc.

### "Fibre Length and Pitch."

The fibre length of pulp from Jack Pine was rigidly compared with that of Spruce and the results of our measurements are as follows:

	Jack Pine	Spruce
Max. length of fibre . . . . .	3 mm.	2½ mm.
Min. length of fibre . . . . .	1¼ mm.	1¼ mm.
Mean . . . . .	2.26 mm.	1.92 mm.
P. C. of fibres over 2 mm.	80 %	73 %

It will be observed that the fibres in the Jack Pine pulp are superior in length to those of Spruce and the former should therefore be an excellent substitute for the Spruce, especially in connection with newsprint paper.

As the content of pitch in woods is practically always an indication of their behavior in either the sulphite or ground wood process, we have made an ether-alcohol extraction of this Jack Pine to determine the total resins and waxes. These were found to be as follows:

. Alcohol extract . . . . .	2.28 %
x. Ether Extract . . . . .	.30

Total Fats, Resins and Waxes . . . . . 2.58 %  
x. Ether extraction made successive to alcohol extraction.

Results of this analysis do not indicate that an excessive amount of resin is present and, furthermore, that this amount of resin does not necessarily preclude the use of Jack Pine in the sulphite process.

It is to be hoped that any person who has made experiments along this line will publish the results of the experiments, for the benefit of all concerned.

## CHEMICAL ENGINEERING CATALOG.

The Pulp and Paper Magazine has no interest in the Chemical Engineering Catalog, other than an appreciation of its value to those interested in the purchase, use and development of chemicals and mechanical appliances used in industries of this character. The editor has had a copy of each issue and knows it to be a valuable book.

The size of this edition is limited and orders must be placed early. Last year more than 800 orders for Catalogs were received after the edition for that year had been exhausted.

The 1920 issue contains about 30% more data than any previous issue, in addition to the corrections and changes necessary to bring it up to date. It is a book of 1452 pages, 9 by 12 in size, and contains the catalog data of 748 firms manufacturing and dealing in equipment, materials and supplies required in industries employing chemical processes. It also contains a list of approximately 1200 scientific and technical books with their prices and a brief table of their contents. In addition to the catalog material, the Classified Directory gives the names and addresses of hundreds of manufacturers of chemicals and equipment whose products are not cataloged in the volume.

The leasing fee for the use of the volume this year is \$2.00 per copy in the United States (\$3.50 U. S. funds, in foreign countries, prepaid) plus the cost of delivery or transportation. Only those who are professional men or who are members of technical organizations in the chemical and allied industries are permitted to subscribe for the Catalog on this basis. The cost to others is \$7.50 per copy.

Send orders to the Chemical Catalog Co., Inc., 1 Madison Ave., New York, giving the title of the position occupied and the nature of the business engaged in.



## The Greatest Conservation of All

We of the pulp and paper industry in the past have been strongly criticised for our lack of interest in conservation. In some cases the charge was unwarranted; in others strongly justified. We were told we were rapidly depleting our forests; depleting them more than the production of paper warranted. Depleting them, in many instances, by ignoring all knowledge of scientific forestry and scientific reforestation. But we were a comparatively youthful industry and, like all youth, prodigal of our resources. But age and experience came to our rescue and we saw the light. Today there are few reputable companies which do not maintain an efficient Forestry Department under the direction of a capable forester. In the language of the street, we had been cutting off our noses to spite our faces. We now realize that the life blood of our industry depends upon the products of the forest and that any intelligent methods we can use to prolong or re-new the life of our forests are well worth our serious consideration. But what is more to the point we learned that a man may spend his life in the woods and yet not know as much about economic forestry as a young pup fresh from college. We learned much the same bitter lesson as did the farmer—he learned that though he spent his whole life on a farm, a young chemist in the Agricultural Department at Ottawa knew more about soil than did he.

We have been so busy the last few years conserving our forests that we have in the main overlooked the most important conservation of all—the conservation of our working force. There is only one way to do that: by intelligently employing men in the first place and then following their progress after employment making sure that we haven't placed square pegs in round holes.

No mill would buy an absolutely new type of paper machine, for instance, until its technical heads had thoroughly investigated its possibilities. Yet the same mill will hire a high priced man on the say-so of a foreman or a Department head who may or may not be a judge of men and who may or may not be thoroughly conversant with the exact qualifications the man should have to hold the position in question. For instance, a man might be highly qualified practically and technically for the position of Sulphite Superintendent and yet have none of the qualities of leadership, be unable to maintain a loyal working force under him. Not until the mill loses some of its best cooks and other highly skilled men does it wake up to the fact that it has picked a "lemon". How many mill heads in employing, beyond a mere superficial questioning, enquire into a prospective employee's temperamental and human qualifications?

The hiring of employees is just as much technical as the designing of an extension to a mill is a question for technical experts. This very fact has developed a group of highly skilled and trained men whose vocation in life is to cull the fit from the unfit, to distinguish the earnest from the casual, the efficient from the inefficient and to develop all to the best that is in them. Some corporations call the man or woman (and there are many of the latter) "Employment Manager", "Employment Supervisor", "Director of Employment" or some similar title.

There are many who think of co-ordinated and organized employment organizations as being designed,

primarily, to deal with the laboring classes. As a matter of fact their most important function is the locating of and hiring of men for important executive positions.

Fundamentally the functions of an Employment Department may be divided under three main heads:

(a) Locating desirable applicants and obtaining full particulars about them and filing same for ready reference should a vacancy occur later in which they would be suitable.

(b) Hiring personnel as the occasion requires. Investigating applicants on a number of points in order to ascertain his or her fitness for the position in question.

(c) After the employee has been engaged, to see that he is happy and efficiently suited in his work. To recommend changes to other classes of employment in cases of men wrongly placed. To act as intermediary between the employer and the employee.

Now let us take the above three functions in order:

(a) What happens in a mill where the employment is done by the manager or a department head. A vacancy occurs. Either the application files are gone over until an apparently suitable applicant is found or he "enquires around for a man with the necessary qualifications. Hit or miss; isn't it?

Now let us take it that the mill has an organized Employment Department. What happens? The employment manager receives a requisition from the department in which the vacancy has occurred for a replacement. He has carefully filled data cards of applicants in every class of work and by referring to his records he locates a number of applicants who have had the necessary training to fill the position. But more important still he may find, through his detailed records, a suitable man within the organization to fill the vacancy. He then communicates with those applicants who seem suitable and by personal examination selects the most likely man. The department head is then called into consultation and if the applicant appears suitable he is engaged. But with his engagement the employment manager's work only begins. He follows the progress of the new employee until he passes the probationary stage and is found entirely suitable. If he does not measure up to his new job the employment manager has him transferred to some other place in which he might better fit and obtains another man without delay.

(b) In the average mill, without an organized Employment Department, how is a new man hired? Something like this. The applicant is asked some haphazard questions as to his age, married or single, where he has worked, and how much he wants. Usually the latter plays a large part. Generally speaking a low-priced man is low in efficiency.

He must be or he would "sell" his services at the highest market price. How often is the applicant met with the old argument that other mills are paying about such and such a wage for similar work. It's not the job entirely that should fix the wage. It's the man. Recent scientific investigation of an office force of clerks, all getting twenty-five dollars a week, showed the following interesting results: 60 per cent were only economically earning \$20.00 per week; 20 per cent were earning their wage and 20 per cent were earning \$30.00 per week. Do you think a standard wage a square deal? Are you making money by it? What is going to become of the \$30 men being paid \$25? Are they going to stay long with you? What busy

mill manager really has the time to ascertain what his men are worth?

Many employers have a prejudice against a man who was "fired" from his last place. Yet many large employers will tell you that some of their best men have been fired from previous positions. The Employment Department is in a position to investigate thoroughly why a man was fired or left his last place. Are you, Mr. Mill Manager?

(c) Perhaps the most important function the employment manager has to perform is that of intermediary between the personnel and the management. Men come to him with their foreman and talk their grievances over. The net result of these talks is a low labor turnover and a better feeling between foremen and men. Everyone knows what a large turnover costs an industry like ours. Above all the Employment Department gives the personal touch between management and men which the busy mill manager never has the time to perfect. The men feel that there is at least one man in the organization who has their interests, their aims and their ambitions at heart. Don't you think your employees would be more happy and contented under such circumstances?

If we are to conserve our human element the most effectual way in which we can do so is by the formation of an Employment Department under the direction of a capable executive specially trained in employment work. The selection of a man to head such a department is one worthy of every care for if he is not a man of heart, broad vision and great understanding you may still have a highly trained department, but it will be machine-like in its functions instead of human, and it must be the latter.

Does it pay? Compute the cost of such a department. Then get your labor turnover figures for one year and compute the cost of it. Figure that intelligent employment methods will cut your labor turnover 50 per cent and then figure the difference. The result will answer your very natural question.

Some of our large mills have employment departments and they are working out successfully but there are still many large mills adhering to the old rule-of-thumb, hit or miss, style of employment.

It is safe to say that all mills now recognize the value of trained forestry personnel to conserve our forests. Isn't it just as important to recognize the necessity of trained personnel to conserve our human resources?—C. K.

#### PRICE BROTHERS' CAPITAL \$42,671,000.

At a meeting this week of the shareholders of the Firm of Price Brothers, the resolution of the directors of the firm to sell the concern to the Price Brothers & Company, Limited, was unanimously approved. The transfer will take place on November 1st.

The meeting was presided over by Sir William Price. The new company, when making the transfer, will assume all the assets, the outstanding bonded debts as well as the liabilities of the old company and will undertake to carry out all its contracts and obligations.

The capitalization of the new company will be \$42,671,000 as compared with \$8,531,200, which is the capitalization of the present company. The increased capital will enable the new company to realize the extensive development in the lumber, pulp and paper industries, for which plans have been made.

#### MENTAL TELEPATHY.

After our editorial "Regarding Immigration" was published (Oct. 14) we read the following in the United States Paper Maker for Oct. 1.—a strange coincidence.

Congress has enacted restraining measures; but to my mind they are neither wise nor sufficient. The principal provision in the existing law aimed to control immigration is a literacy test. It is supposed to prevent the coming in of any who have not had certain educational advantages. Experience, however, has taught us that most social troubles originate with that element cursed with a "little learning", which has always been held to be a dangerous thing. It is the man who has a smattering of education who gets the notion that he is too good to work and at once becomes an agitator in the endeavor to live by his wits. The illiterate may easily be led into mischief but they seldom plan it. It is my view that most of our social and political troubles originate among the so-called educated classes. Trotsky is a man of eminent literary attainments, but I had rather trust America's future to a million immigrants who can neither read nor write than have him among us. Debs is a well-read man; but he is far more dangerous for that very reason. The law, therefore, keeps out the honest toiler who might become a good and useful citizen, but allows free entry to the educated enemy of free government. We could use a few workers of limited literary achievement. As a friend of mine recently put it, "When all our men and women become college graduates, who's going to carry out the garbage?"

I know labor is scarce; but people who might labor are not scarce. If every able-bodied man and woman in this country would go to work, we could take care of all there is to do and have plenty of time to play. More people brought into the country does not necessarily mean more work. It is more apt to mean shorter working hours and more loafing.

This country has cost too much and is worth too much to destroy it for the sake of a temporary industrial gain, admitting there would be gain. What we need is to pay more heed to the quality of our citizenship than to its quantity. Better preserve our national character even if some of us have to milk the cows instead of playing golf, and some of our wives and daughters have to wash dishes instead of playing bridge.—C. F. M.

#### ONTARIO SETTLERS MAKING MONEY ON PULPWOOD.

A recent report from Cobalt, Ontario, states that settlers in the north land who have pulpwood on their properties, and who reside within a reasonable distance of the railroads, are reaping big harvests—all due to the great scarcity of newsprint paper in the cities. The prevailing price of pulpwood at present is around \$15 per cord, with a payment of \$5 on account as soon as the pulpwood is cut and piled in the bush. The price four or five years ago was \$4.00 and \$4.50 per cord.

As high as \$17.50 per cord is being offered by representatives of the large mill interests for delivery at the track—the whole \$17.50 at the track and no previous payment on account. However, the majority of the settlers cannot benefit by this price, as they usually need money before the hauling begins and require the advance of \$5 in the bush.

The only things one could put off until tomorrow are the things one should not do at all.

**GERMAN PAPER MILLS IN VERY BAD CONDITION.**

(From Our London Correspondent) <sup>w</sup>  
 London 18th Oct. 1920

New light has been thrown on the condition of the German paper industry and judging by a recent statement the "Fatherland" is in a very bad plight. The pulp industry has also not recovered itself since the war, though small shipments are being exported to England and other places.

It was at an extraordinary general meeting of the Hartlepoons Paper Mill Company, Ltd., held in London on the 12th inst. that the truth about Germany was revealed. Sir Robert W. Carlyle, K. C. S. I., (President) was in the chair and Mr. Popham, one of the shareholders, addressing him said, he understood that Mr. William Harrison had recently been to Germany with a view to making inquiries into the paper-manufacturing industry there and the conditions of the trade generally as compared with the industry in England. Previous to the war Germany was Britain's greatest competitor. The shareholders would like to hear Mr. Harrison on his visits.

**Mills Without Coal**

Mr. William Harrison, who has spent the month of August and part of September making an extensive tour in the pulp and paper centers of Germany said: My tour was for the benefit, I certainly believe of the Hartlepoons Paper Mill Company. Now, what did I find in Germany during my travels of some thousands of miles? I found that the German paper mills were in a very bad condition. They were practically without coal, and the paper mill owners told me, with a certain sadness in their eyes, we cannot make paper as long as the French compel us from Monday morning until Saturday mid-day, to ship to them by boat some 2,000,000 tons of coal per month. I found that one of the largest paper mills I visited had not been running for seven months and only had enough coal to run for two or three days when I was there. But, the German coal question and paper industry, so far as it concerns this country, is only one side of the subject. I want you to consider another side and it is this: as you know these have been great fluctuations in the Mark on the Exchange, manipulated in my view by the International Ten. When I was in Germany I bought the Mark at something like 160 or 170 to the £1; It has since been something like 235 to 240 to the £1. That, in my view, is an important factor as affecting the paper industry of the United Kingdom. So long as we have that fluctuation in the German Exchange, we have to be on our guard, and as a company we are determined, along with other papermakers in Britain, to be on our guard, for believe me, the German does not mind the Exchange being down to 235 to the £1. Rather does it concern the British paper manufacturer.

**Finnish Pulp 150 Marks to £1.**

Continuing, Mr. Harrison, said: It is up to us to see that the German who bought his pulp in Finland at 150 Marks to the £1, and can now dump it in this country with Marks at 235 to the £1, thus getting more Marks for his £1, is not permitted to do

so. And I for one am going to take good care that the papermakers of Great Britain combine together, if necessary, to stop this dumping if it ever takes place. But we are in this position: There is no chance at the moment of large dumping of German paper, although you get isolated lots offered to you at for less than the British papermaker can quote you. But the German, from my personal study of the situation in Germany for nearly a month, is still a very wily individual, and we take care, in combination with other mills to see, if necessary, that the fluctuation in the German Exchange is not going to help him. Sir Robert Carlyle and myself, along with other delegates, are leaving shortly for an extended tour in Norway, Sweden, and Finland, to study the situation there on behalf of the Hartlepoons Paper Mill Company, because, we realise as a board that the key of the situation in the future prospects of any paper mill which is properly conducted in the United Kingdom, lies in people who are directing the company, knowing how to purchase and when to purchase raw materials for your mill. We want to study the situation. Sir Robert Carlyle at one meeting not long ago, referred to the Hartlepoons Paper Mill Company, contemplating the purchase a pulp mill in Norway or Sweden. That is an important matter in my opinion for the future prosperity of the company.

**War Kills Splendid Industries.**

In these statements made by Mr. Harrison, who understands what a pulp and paper mill should be like, one can read between the lines that after 2 years of a most terrible war the country who started it has "killed the goose that laid the golden egg." Prior to 1914 the German paper and pulp industries were a credit to any nation and papermakers had many lessons to learn by the methods adopted in the Fatherland. Today they are practically doomed with a war indemnity hanging round the country's neck and it is quite evident another year must elapse before it can be said the Germans will show anything like a good hand in competition. It must be remembered that although paper and pulp mills are in a backward condition it does not follow that Germans are lying dormant. They are very much alive just at present in a small way and the old motto must be respected in this connection "we creep before we walk."

A glance back into the past will give some indication of the extent of the German pulp industry. In quoting figures of quantities of any values I will give those from the German sources and I may assume that they are well below the exports: because, my experience has been that one cannot rely on their returns before war broke out. Consular officers also had some difficulty in getting at anything like the true figures: but the following exported pulp in 1913 will give an idea of what Germany was doing.

**Exports.**

	100K.2
Groundwood—	
To France	61,663
To Italy	6,788
	68,451
	75,075
Value (marks)	653,000

Chemical—	
To Belgium	102,320
France	410,139
Great Britain	362,975
Italy	236,006
Netherlands	95,029
Austria	24,024
Portugal	9,254
Russia	18,345
Sweden	12,619
U. S. A.	352,468
Switzerland	56,357
Spain	71,264
Argentina	30,092
Total	1,794,630
Value (marks)	35,236,000

From these exports it will be seen that a thriving industry received a severe check. Going back earlier I find the exports were as follows:—

	100Kg.	Groundwood	Chemical
1911	57,713	1,658,633	
1910	55,880	1,707,753	
1909	74,871	1,470,878	

For comparison I will give Canadian exports for the same years as those furnished by Germany—

Chemical—	Costs.	\$
1913	1,112,457	2,100,842
1911	724,428	1,308,101
1910	864,606	1,658,846
1909	826,585	1,603,006
Groundwood—		
1913	4,749,719	3,408,702
1911	5,867,227	4,407,431
1910	5,038,850	3,545,751
1909	4,612,509	2,703,923

Most of these exports from Canada were sent to U. S. A. and Great Britain, and now Canada stands every chance of picking up what Germany has lost by declaring war.

### Paper Exports.

Like the pulp Exports, the paper exports from Germany in pre-war days were also difficult to get accurately, the returns being something "on a par" with those about the strength of the "Fatherland's" armies. In this respect, however, I can only quote the British Trade Board figures for 1913, just to give but a small idea of the German export of paper to one country, Great Britain.

	Cwts.
Reel paper	172,806
Printing & Writing Paper	301,741
Paper Hangings	38,210
Coated Paper	53,410
Packing Paper	892,589

Since the war Norway and Sweden have picked up a good deal of the German trade in England, while Canada & Newfoundland got a fair share of news print orders.

Mr. Harrison has not overstated what he has witnessed in Germany Canadian consumers of paper from German sources also require to be warned on the Exchange question as it will hit them harder than the people of England, owing to the value of the dollar today outside the Dominion.

### THE SAFETY WEEK CAMPAIGN IN ONTARIO.

The "Safety Week" campaign in Ontario is over and has served a useful purpose. The public has been taught to think and has been shown that accident prevention is largely a matter of ordinary, not extraordinary, care and precaution.

There were definite campaigns against accidents and fires running in fifteen towns and cities in Ontario, some large and spectacular campaigns and others of a less conspicuous type, but all with the object of inliting the co-operation of everyone in cutting down the losses due to accidents.

During the drive, the various classes of each community were shown how they could assist in making their own city safe from accidents. The motorist, the street-car man, the teamster, the pedestrian, the woman in the home, the child at school, the men and women in industry, all had a lesson and from each lesson all have learned something. The campaign was unique in that it was a matter of vital interest to each community; not something that was being done in some other city or some far off land, but a campaign affecting the lives and well being of each city where the work was conducted.

In addition to an enormous amount of special literature prepared for purely local use in several of the larger cities, the Ontario Safety League issued 60,000 general bulletins, 10,000 school bulletins, 125,000 parcel inserts, 150,000 gummed seals, hundreds of rubber stamps, 70,000 letters to parents, 85,000 window cards, 30,000 automobile stickers and thousands of cards, notices, etc.

It will prove an interesting comparison to take the accidents of "Safety Week," this week and next week and contrast them with the three weeks preceding "Safety Week." Experience of other campaigns would point to a very considerable reduction in accidents of all types.

### CANADIAN MILLS IN SOUND POSITION.

For many months, both speculative and investment buying has been very active in the pulp and paper section of the Canadian investment market. We cannot attempt to forecast immediate movements in Canadian pulp and paper securities, but we can state with authority that the intrinsic value of the securities of established and soundly-managed Canadian pulp and paper companies were never higher than they are at the present moment. Speaking from intimate association with many of the most representative Canadian pulp and paper companies, we cannot emphasize too strongly the financial strength, from the standpoint both of working capital and of earning power, of the larger Canadian pulp and paper companies to-day. The contract market for their products is strong. While some decline is to be expected in spot prices for pulp and paper, we look for at least a maintenance of to-day's contract prices for some months to come. It is quite within the range of possibility that present contract prices for newsprint will be increased; and it must be remembered that current market prices for pulp and paper, while reasonably profitable to American mills, are doubly profitable to Canadian mills. There are the best of grounds for believing that the financial statement of the stronger of our Canadian pulp and paper companies for the current year will be found most satisfactory by investors in Canadian pulp and paper securities.

# Regulations for Cutting Pulpwood on Dominion Timber Berths

The following regulations governing the granting of permits to cut timber for pulp purposes on Dominion Lands in the Provinces of Manitoba, Saskatchewan and Alberta, the North West Territories, within twenty miles on either side of the Canadian Pacific Railway in the Province of British Columbia and the tract of three and one-half million acres controlled by the Government of the Dominion in the Peace River District in the Province of British Columbia, were approved by Order-in-Council, 19th May, 1920.

That berths shall be disposed of by tender, after having been advertised for not less than ninety days in at least two newspapers having a general circulation in the province in which the berth is located.

That persons desirous of securing pulpwood berths shall locate the same and make application therefor to the Controller of the Timber and Grazing Lands Branch, Ottawa or to the Crown, or to the Crown Timber Agent for the district. The applicant shall furnish a ground sketch or plan showing the boundaries of the tract applied for.

That in the event of it being decided to dispose of a berth as provided in these Regulations, the Minister, after an inspection has been made by an officer of his department, shall decide the area to be included therein and whether or not it will be necessary to have the boundaries thereof run by a duly qualified Dominion Lands Surveyor. If a survey is necessary, the successful tenderer shall be required to pay the cost thereof, and the amount involved must be paid before the agreement hereinafter referred to is executed. If a berth is granted without the boundaries being surveyed, and it is afterwards found necessary to have a survey made, the Minister may require the permittee, at his own expense, to have the boundaries run by a Dominion Lands Surveyor, and to keep the marking of the boundaries in such condition that the boundary lines may be readily observed.

That the length of a berth shall not exceed three times its width, and that in the event of a berth comprising several blocks the length of no block shall be more than three times its width.

That a tract containing sufficient merchantable timber 10 inches and over in diameter at the stump to make the same a saw mill proposition shall not be included in a pulpwood berth.

That tenderers shall be asked to state the amount per cord on pulpwood they are prepared to pay as a bonus, in addition to dues at 60 cents per cord, but the rate of dues chargeable on timber cut may be fixed from time to time by the Governor in Council.

That a berth cannot be assigned or transferred without the consent of the Minister, and where assignment is agreed to, a registration fee of 25 cents per square mile shall be charged.

That a tenderer shall be required to deposit with his tender a marked cheque drawn on a chartered bank of Canada, payable to the Deputy Minister of the Interior, for a certain amount, which shall depend upon the size and value of the berth, and which amount shall be forfeited in the event of his

not entering into agreement to carry out the conditions attached. The amount of deposit will be set out in the notice calling for tenders. If the successful tenderer enters into agreement to carry out the conditions, the deposit will be applied on account of bonus dues as they accrue, but the regulation dues will require to be paid in the usual manner as returns of cutting of wood are received.

The Minister may, subject to the approval of the Governor in Council and subject to these Regulations, enter into an agreement with the successful tenderer, the general conditions of which shall be available when the berth is being advertised for sale, requiring him to erect within the limits of the berth or at some other place approved by the Minister, a pulp and paper mill costing with the equipment thereof and machinery contained therein a specified sum, to operate the mill to a certain extent; to keep a certain number of hands employed, etc., but before entering into the agreement, the Minister shall require him to furnish a bond from an approved guarantee company for an amount not less than 3 per centum of the amount proposed to be expended upon the paper or pulp undertaking (but exclusive of the amount proposed to be expended upon the water power development, if any, the guarantee for which is provided for under the Dominion Water Power Regulations), for the purpose of guaranteeing the faithful performance of such agreement; and such agreement shall provide that the initial development shall be completed and placed in operation within such period, not exceeding five years after the agreement is executed, as may be stipulated therein. The agreement shall provide that at least a certain percentage (never less than 50 per cent) of the pulp manufactured shall be manufactured into paper at the mill erected by the permittee.

The agreement shall provide that the successful tenderer may, if he so desires, apply under the Dominion Water Power Regulations for the right to develop any conveniently located water power for the purpose of supplying energy to his mill or mills, and if the water power applied for is available and, in the opinion of the Director of Water Power, suitable for the purpose, the Minister shall proceed under the Water Power Regulations to enter into an agreement with the successful tenderer whereby the successful tenderer shall, on the satisfactory completion of the development, become entitled to a lease for the necessary Dominion Lands and a license to use the water for the purpose of his water power development.

Note:—This provision is not effective in British Columbia.

It shall be provided in the agreement that the berth shall be subject to an annual rental at the rate of \$1.00 per square mile, due in advance on the 1st May, but this rate may be changed from time to time by the Governor in Council. If rental is not paid on the due date, it shall be subject to interest at the rate of 7 per cent per annum.

The agreement shall provide that the successful

tenderer, provided he has complied with the conditions of the Regulations and his agreement, shall have the right to secure from the Dominion Crown Timber Agent for the district a yearly permit covering the berth, authorizing him to cut and remove all trees suitable for the manufacture of pulp 7 inches and upwards in diameter 18 inches from ground, sufficient to supply the mill or mills for a period of twenty-five years from the date of the sale of the berth, provided the berth contains a sufficient quantity, it being understood that the Minister does not guarantee any particular quantity of pulpwood nor undertake to do more than grant the right to cut such quantities of wood of the kind aforesaid mentioned as may be on the berth. It shall also be provided that the permittee shall be entitled to secure yearly permits for an additional twenty-five years, provided he has faithfully complied with all the conditions of the agreement and the Regulations.

The agreement shall provide that all permits shall expire on the 30th April following the date of issue, but, as set out in the next preceding clause, the holder of the berth, provided he has complied with the conditions of his agreement, and the Regulations, shall be entitled to a renewal permit.

That the permittee shall pay one-half the cost incurred by the Crown in guarding the timber on his berth from fire, the Crown paying the other half. A statement will be furnished the permittee showing his share of the cost incurred, and payment thereof shall be made to the Crown within thirty days thereafter.

Some of the other conditions of the agreement may be as follows, but the Minister may insert such other conditions as he may consider necessary:—

That the permittee shall take from every tree he cuts down all the timber down to and including 4 inches at the top end, and, shall dispose of the tops and branches and other debris of lumbering operations in such a way as to prevent as far as possible the danger of fire, in accordance with the directions of the proper officer of the Timber and Grazing Lands Branch of the Department of the Interior.

That if the Minister should ascertain, after inspection, that any lands within a berth have not a sufficient quantity of pulp timber to make it profitable to remove the timber upon such portion of the berth, he may withdraw such portion of the berth provided the permittee or his legal representative has had sixty days' notice thereof, and that upon such withdrawal the ground rent shall be reduced in proportion to the area withdrawn.

That the permittee shall cut all the timber suitable for pulpwood purposes of the size authorized under these Regulations as cutting progresses, and any timber which, in the opinion of the Crown Timber Agent or officer acting for him, is left on the berth uncut or cut and unhailed, shall be subject to regulations dues. The Minister may, however, require, in order to provide for the proper reproduction of the forest, that certain designated trees exceeding 7 inches in diameter 18 inches from the ground shall be left uncut. The total quantity of such trees as may be designated to be left shall not exceed, on the average, 10 per cent of the total volume of the trees removed for the manufacture of pulpwood. If the trees designated to be left uncut are cut, dues shall be charged on the estimated

quantity of material in such trees at not less than double the regulation rate of dues.

That the permittee shall prevent all unnecessary destruction of growing timber on the part of his men, and exercise strict and constant supervision to prevent the origin and spread of fire, and shall also comply during the term of his permit, and of any renewal thereof, with all regulations made in that respect by the Governor in Council and with all laws and regulations in that respect in force in the province or territory in which the berth is located.

That the permittee shall furnish the Dominion Crown Timber Agent having jurisdiction in the matter with quarterly returns, or at such periods as may be required by the Minister, sworn to by him or his authorized agent cognizant of the facts, showing the quantity of pulpwood cut during the period covered, and shall pay dues thereon at the rate agreed upon. If payment is not made on the due date, interest at the rate of 7 per cent per annum shall be charged.

That the permit shall entitle the holder to cut pulpwood only and shall not convey to him any right to the soil or use thereof except as may be necessary for cutting and removing such wood.

That no wood cut on a berth shall be exported or sold or disposed of to any person or persons, but such wood shall be used for the purpose of supplying the said mill or mills.

That failure to erect a mill or mills and make the required expenditures within the time specified shall entail forfeiture of the right to cut pulpwood and of the amount of the bond deposited with the Minister.

That the pulpwood shall be cut upon such portion of the berth and in such a manner as the Minister may from time direct.

That no refuse, chemicals or matter of any other kind shall be placed or deposited in any river, stream or other waters in such a manner as shall, in the opinion of the Minister, be injurious to fish life.

That a berth shall be subject to cancellation for non-compliance with any of the conditions of the agreement or of the Regulations.

#### NEW FORESTER AT LAURENTIDE.

Mr. A. W. Gamash, who has been the Assistant State Forester of New Hampshire for some time, recently resigned that position to take one with the Laurentide Forestry Department. Mr. Gamash is a graduate of the New Hampshire State College, and also has taken special forestry courses at Yale. During the war, he was in an American forestry unit and spent about two years in the forests of Scotland and France. He takes over the work performed by Mr. Leon A. Nix.

#### VALUABLE TIMBER LIMIT SOLD.

The timber limit belonging to the Gibson Indian Reserve, near Bala, was auctioned off at Parry Sound last month, by Mr. A. R. Jackson, for the Department for Indian affairs, and was sold to the McGibbon Lumber Company, of Penetang, for the sum of \$171,500, they being the highest bidders. The reserve bid was for \$150,000. There were quite a lot of lumbermen there bidding for the limit, among whom were representatives from Pratt & Shaughnessy, Manley Chew, John Harrison & Sons, of Owen Sound; McGibbon Lumber Co., and others.

## British Trade News

(From Our London Correspondent)

London, 12th Oct., 1920.

The first conference of the Technical Section of the British Paper Makers' Association was held Oct. 8th, in the Milton Hall, Manchester. Mr. A. Baker, (Empire Paper Mill) chairman of the Section, presided and there was a good attendance. The chairman enlarged upon the necessity of British papermakers studying the problems which faced the industry, especially in these days of paper shortage and strong competition from other countries. Mr. A. W. Foster, (Secretary), commented on the satisfactory membership of the Section and the success which has been achieved. During the conference Major J. Erdington Aitken's paper on "Technical Education in Papermaking," elicited the highest encomiums from the members. Mr. G. H. Gemnell, B.Sc., a consulting paper mill chemist, read a paper on "The Testing of Wood Pulps," which proved instructive. Mr. A. MacIvor, N.J.M.E., engineer of the Wall-Paper Manufacturers Ltd., contributed some interesting comments on "Machine Strainers" and a director of Charles Walmsley & Co., Ltd., Mr. William Adamson, dealt with "The Economic Utilisation of Heat and Power in Paper Mills." The well arranged program included other attractions and a feature of the conference was the free and open discussions. Everything augurs well for the success of the Technical Section and with such men as Mr. Arthur Baker and Major Aitken at the head of affairs, nothing will be left undone.

### Mills Change Hands.

Since the outburst in England some months back of the big demand in Canada for pulp and paper, more interest has been centred in the British paper mills. This interest is reflected in the changing of owners of mills in various parts of the United Kingdom, the opinion no doubt prevailing that they are sound investments. Put a new financial issue, or prospectus, on the market today and let it mention a paper or pulp mill and tomorrow you will have more money than you require. One has only to look at the Anglo-Newfoundland Development Company's recent enterprise. The shares are all well and satisfactory quoted and everybody is pleased at present. As a matter of fact the general public in England are beginning to realize there is money in pulp and paper, and for this reason, mills are changing hands. A group has just negotiated for the Inverkeithing Paper Mill, run by Caldwell & Co., Ltd., and one of the old established properties of which Britishers are very proud — not to mention papermakers. Then the one-machine mill turning out good class and colored papers at Barkisland, near Halifax, has passed into the control of Mr. G. H. Wilkinson, National Paper and Pulp Co. Ltd., who has now seven mills at his disposal.

### Irish Paper Burnt.

Recently, some of the newspapers in the West of Ireland, were raided and printing paper destroyed in some cases. So if they are not slaying Sinn Feiners or policemen in the "Emerald Isle," they are burning newsprint. The other day one of the big papers in Cork had a large supply destroyed. To put the finishing touch to all things there is a big strike in Dublin port and cargoes of newsprint are held up. From what I can learn the paper mills there are not suffering any loss and the strike is only causing a temporary disadvantage.

## The Paper Market.

The paper industry of the United Kingdom has its back against the wall. No sooner had the mill owners got over the settlement of the wages question with their workers than the railway people started with high costs, and now they are up against the agitation of the typographical and compositors in the printing offices for better salaries. And so the game goes on! The paper mill man is expected to "carry on," notwithstanding what happens, and in addition, he has to meet Scandinavian competition. Therefore, he would be a wise man who could give an accurate gauge of what the paper market is like in England today. Buyers go about knowing that trouble is brewing over head and the mill owner hesitates before putting his signature to a contract, because he does not know when the coal miner is going to close down his mill for want of fuel. Business is getting into a state of chaos and unemployment is becoming rife — which, of course, must be expected as a result of agitations, adverse and otherwise. Now what is the result? Some of the newsprint mills have been, in the North of England, on the verge of closing down for a spell; stocks of certain classes of papers have been going for a little over cost price and boards showed a reduction in values. Here is no slump — far be it. It is just the unsettled state of the labor elements. But the outlook is not healthy at the moment. Merchants are dull, printers could do with more work and the paper mills are cursing the miners and their leaders.

### Paper Mills Going a Begging.

In the London "Times" there appears advertisements announcing that some small paper mills are for sale. One mill is noted for paper and fibre boards and two others contain one machine each for the production of high-class papers. No one seems to know where these mills are, as transactions are to be conducted privately. It is quite evident the high cost of raw materials, labor, transport, and excessive taxation — somebody, of course, must pay for the war, — are crushing out small mills in the United Kingdom, and the present condition of things is reflected in the small private advertisements in the daily newspapers.

### Paper Market.

Good employment is a sign that an industry is standing well on its legs; unemployment indicates that things are not going well. If one takes the labor market as a barometer, indicative of progress, or "slump," in a trade, or industry, we may assume that there is a dull paper market just now in the United Kingdom — from a seller's point of view. What is wanted is more consumption. As a matter of fact a reaction has set in since the Armistice was signed and the paper industry here is getting its share. One of the Union secretaries stated the other day, that he had a good many men unemployed and he wanted to find vacancies in mills for them somehow or other. He thought it was only a temporary set-back, though, he admitted, the winter outlook was gloomy enough. As a matter of fact, the threatened coal strike in the mining districts — negotiations are still going on about it, — upset all industries and buyers and sellers adopted a wait-and-see policy. That is really the state of things today in the paper industry — orders are not plentiful and buyers are hesitating, as their own businesses may be affected if the coal strike comes along. Newsprint, however, is doing well. It can always find an outlet.

### Where the Newsprint Goes.

The London "Daily Mail," one of the Northcliffe newspapers, has a circulation of 1,206,408 copies a day. This is certified. The "Evening News," which belongs to the same people, claims a daily circulation of 825,825 copies, and there are five editions of the paper each day, except Sunday. Now the "Evening Standard" and the "Star" challenge the "Evening News" on their figures and more particularly for saying that the sale "exceeds the combined net sale of any three London evening newspapers." The "Star" and the "Evening Standard" assert that the net sales of these two papers alone exceed by many scores of thousands daily the highest figure given in the certificate issued by the "Evening News." The challenge is followed up by £10,000 which the losing side must pay to charity. Apart from the merits and demerits of this newspaper "wrangle" one cannot fail to recognise the enormous amount of newsprint these 3 papers alone get through. They run 8 pages, 16 pages, and sometimes more. The "Daily Mail" has sometimes 10 or 12 pages — more often the latter. Most of the great daily and evening papers can boast of big circulations and the most notable feature among them is that there is never a shortage of newsprint. They can take plenty and if they cannot use it all, they will store it for a rainy day. Recently I have seen newsprint used of a very close resemblance to the Canadian product and I am wondering if there is a leakage on the American side. Further investigation may prove something, perhaps.

### The Imperial Press and Canada.

There are all kinds of writers at present — good, bad, and indifferent — penning articles on the great progress of the paper and pulp industry in Canada. Nearly every mill the Imperial Press Conference delegates visited is being boomed from the writer's own point of view—including the woman's. The advertisement is certainly a good one, but what one would like to see is more hard cash invested in the Dominion opportunities. I cannot forget that little phrase "Trade within the Empire," which was coined after the Armistice.

### The Land of Milk and Honey.

Canada, according to some of the gentlemen who have returned from the Imperial Press Conference in the Dominion, is a land flowing with milk and honey. Some of the papers give extended reports of what the delegates had seen. One writer says that if British capital is not soon invested in Canada, it will be full of nothing but American dollars. Sir Campbell Stuart says the output of newspapers and periodicals, in the Dominion is, in fact, very large in proportion to the population and the cause is not an extraordinary demand for publications, but the remarkable supply of paper at comparatively low prices. This is a gentle hint for the British paper mill man. Another writer has made the wonderful discovery — because he has not read his own English newspapers — that the manufacture of paper is a growing industry in the Dominion. New mills, he says, are springing up and established concerns are extending their operations. It is, however, disappointing to find that the United States is taking up most of the surplus production, he adds. One would like to know if this delegate of the Imperial Press Conference ever contended that Canadian newsprint should be utilised on his machines, instead of Scandinavian? He has seen Canada now and he should not forget the

motto, "Trade within the Empire." Then he goes on to say: "These conditions are not likely to change unless some British capital — and with it British influence — finds its way into paper-making promotions. As the matter stands, American capital flows in and paper supplies flow South." Why—???

### Ten-to-One Winner.

Papermakers in Ireland, that "distressful country," enjoy a little play; "All work and no play makes George a dull boy," — so Mr. George P. Fleming, of the Inchicore Paper Mill, goes in for horse-racing as a bit of sport. "Ten-to-one the Winner"; "Ten-to-one Besse Belle" was the shout at Lanark (Scotland) last week. "Besse Bell" did win and Mr. Fleming smiled when he was handed the Lanarkshire Handicap valued at £400. He has not told us what sulphite he fed it on. And didn't the Scotsmen look gloomy when they saw the £400 going across to Ireland. This is Mr. Fleming's second win with "Besse Bell" — the pride of the British paper industry.

### Pulp.

The market continues dull for all kinds of pulps. Buying is on a small scale at unchanged prices. Paper mills are well stocked — and not too full with orders on their books. They could do with more at present which might be reflected in the pulp market.

### PAPER PRICES IN SWEDEN.

The Association of Swedish Paper Mills writes the Swedish American Trade Journal, that the following are the average prices of paper.

Sulphate.	1,285 kronor per ton F.O.B.
Sulphite.	1,285 kronor per ton F.O.B.
Greaseproof, 42 gr.	1,542 kronor per ton F.O.B.
Newsprint.	1,100 kronor per ton F.O.B.
Writing.	2,500 kronor per ton F.O.B.
Book.	2,100 to 2,200 kronor per ton F.O.B.
Brown cardbrd.	651 to 685 kronor per ton F.O.B.
White cardbrd.	548 to 600 kronor per ton F.O.B.

### FUTURE PRICE OF PAPER.

Newsprint paper has sold on spot in the United States recently at 10c, a pound against a high price of 15c, some months ago. While the price in sales on spot has weakened, actually the price on long term contracts has advanced, the quotation now being 6½¢, against 5c, in the spring. The great bulk of the output of the Canadian mills is sold on long term contracts and the indications are that this price of 6½¢, for the last quarter of the year will also be in effect in the first quarter of 1921.

The industry in Canada has prospered on a much lower level of prices than now prevails, and its technical position is actually a good deal stronger than the technical position of any important manufacturing industry on the continent. The margin between production and consumption is narrow and this will probably support prices during the period of adjustment in general business. Greenshield's Review.

### HANDLE ROLLS CAREFULLY!

Never pull the "hoist" chain to lift a roll from the rewinder until you are sure the hook is properly placed on the shaft.

Don't swing the roll from its place while it is still revolving — it may roll out of the hook.

Take no chances.



## NATIONAL FORESTRY PROGRAM APPROVED BY NEW YORK CONFERENCE.

In New York on October 15, for the first time after many years of agitation and controversy, a definite proposal for a national forest policy received the preliminary endorsement of the several elements chiefly concerned, which promises well for its adoption and for its success through their cooperation and through fair sharing of public and private responsibility.

At this conference accredited representatives of the nation-wide lumber and paper industries which control most of the commercial forests in private ownership met with similar representatives of the United States Chamber of Commerce, and the American Forestry Association, speaking in behalf of the general public, and of the wholesale lumber distributors, the newspaper organizations vitally interested in the paper supply as well as in general economic welfare, and the great wood-using industries such as furniture and vehicle manufacturing, railroad operation and the like.

Unanimous agreement was reached on all essentials of a federal legislative program, more specific in detail but substantially in accord with the recommendations made last June to the United States Senate by Chief Forester, W. B. Greeley. Col. Greeley was also at the conference by invitation and gave its conclusions his full approval on behalf of the United States Forest Service. It is expected that this preliminary agreement, being thus so significant of accomplishment through its full consideration of the public welfare, will receive the ratification of all the public and private agencies represented and also be acceptable to the majority of others interested including the forestry departments of the several states.

The primary provisions are two-fold for a considerable extension of direct federal activity in forest ownership and production, and for the development with federal aid and encouragement of such systematic policies in the several forested states as, being consistent with local conditions, will bring about adequate forest protection and reproduction in the interest of these states and of the public at large.

With these aims, the program provides specifically, through co-operation between the Government, the states and owners of timberlands, for adequate protection against forest fires, for reforestation of denuded lands, for obtaining essential information in regard to timber and timberlands, for extension of the national Forests, and for other steps all essential to continuous forest production on lands chiefly suitable for this purpose.

Much of the responsibility outlined lies with states and with private owners. To define that which lies with the government and hence is properly for the consideration of Congress, the following legislation is proposed:

1. Authorizing the Secretary of Agriculture after consulting appropriate local agencies to approve an adequate policy for each state, covering the essentials of fire protection on timbered and restocking lands, reforestation of denuded lands, and, where and to the extent necessary, the cutting and removing of timber crops so as to promote continuous production of timber on lands chiefly suitable therefor, and authorizing his co-operation in the work required, provided there is also satisfactory local compliance in state legislation or administrative practice. Chief although not entire emphasis for the time being on fire preven-

tion, as the most important single step, and not less than a million dollars annually available for such co-operation with states.

2. A survey to obtain necessary information as to forest resources, forest production and forest requirements of the nation.

3. Provision for studies and experiments in forest reproduction methods, wood utilization, timber tests, wood preservation, development of by-products and other steps to bring about the most effective use of the nation's forest resources.

4. Provision for a study of forest taxation, to assist states in devising tax laws which will encourage the conservation and growing timber. Also of methods of insuring against forest losses by fire.

5. Provision for more rapid replanting of the vast areas of denuded lands within the National Forests.

6. Appropriation of ten million dollars a year for five years for the purchase of lands which should be added to the National Forest System, whether or not on the headwaters of navigable streams as such purchases are now limited.

7. Authorizing acquisition of similar lands by exchanges of land or timber when clearly in the public interest.

8. Authorizing the addition to National Forests of lands now in other forms of government ownership, but found chiefly suitable for permanent forest production.

Some of these features of complete Federal program will doubtless be covered in whole or in part by recommendations to Congress by the Secretary of Agriculture in connection with the agricultural appropriation bill. It was felt by the conference, however, that they should be presented in a comprehensive measure, clearly setting forth the picture of an adequate national forest policy and proper Federal participation therein. By this means, with other efforts the necessary private and state participation can best be shown and obtained.

The following organizations were represented at the conference: American Paper and Pulp Association, National Lumber Manufacturers' Association, National Wholesale Lumber Dealers Association, Association of Wood Using Industries, American Newspaper Publishers' Association, American Forestry Association, U. S. Chamber of Commerce, U. S. Forest Service.

## QUEBEC PLANTING THREE MILLION TREES

In connection with an article in another column, it would be interesting to repeat the remark of Dr. E. L. M. Dechene, Deputy Minister of Lands and Forests for Quebec. "An attempt is being made," he states, "to substitute Jack pine for spruce in the manufacture of paper, as millions of tons of the former are available in the province of Quebec." Other observations of Dr. Dechene are that there is not likely to be any decrease in the price of pulp wood for three years; and that three million new trees will be planted in Quebec this year. It is the aim to plant two trees for every one cut down.

Between August 17th and Oct. 14th, the Lagerloef Trading Company, Inc., 18 East 41st St., New York, has received through the port of Philadelphia, six cargoes of pulp from Finland. The total import was 85 tons of chemical pulp and 1221 tons of mechanical pulp. This would indicate that Finland is becoming quite a factor in the American wood pulp market.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A-1. Microscopy of pulpwoods.** Eloise Gerry, Forest Products Laboratory, Madison, Wis. Paper, **26**, 277-98, 308, 1920. The characteristic structures of the various types of woods are described. Tables are given giving the chemical properties and resin content of Can. pulp woods, general average of fiber lengths for ordinary mature material of various species and the variation from it, some fiber lengths of hardwoods, and the variation of fiber length within the annual ring in Douglas fir specimens. The lab. equipment useful for examining wood and pulp fibers is listed; and the methods to be used in the microscopic examination of woods and woodpulp fibers is given, together with a key for the identification with the naked eye or with the aid of a hand lens magnifying 12 diams. of woods commonly used for pulp and paper making. The results of over 34,000 measurements made at the U. S. Forest Products Lab. show that there is no distinctive or approximately constant fiber length for each species, at least in the more common conifers and hardwoods used for pulp.—A. P. C.

**A-1. The proximate analysis of coniferous woods.** W. H. Dore, Univ. of Cal., Berkeley, Cal. J. Ind. & Eng. Chem., **12**, 476-9, (1920). An improved procedure is described for the summative analysis of coniferous woods. Methods are given for the estimation of the following constituents: loss on drying, benzene extract, alcohol extract, cellulose, lignin, soluble pentosans, mannan, and galactan. By the omission of preliminary hydrolysis, more reliable results are obtained in the cellulose and lignin determinations than by methods previously used. Soluble pentosans are determined in the chlorination liquors, mannan and galactan in separate portions of the original material. Improvements in the galactan determination are described. Complete analyses of redwood, yellow pine, and sugar pine are carried out by these methods. A summation of slightly over 100 per cent is obtained in every case. The results indicate that overlapping of the proximate groups, i. e., partial inclusion of any constituent in more than one group, has been largely avoided. Analyses by the proposed scheme probably account for all important constituents of coniferous woods.—A. P. C.

**A-2; K-6. Pulp from cotton linters.** Further mill trials on the pulping of second cut cotton linters. Otto Kress and Sidney D. Wells, Forest Products Lab., Madison, Wis. Paper, **26**, 320-6, 1920. The details of 2 commercial cooks and one papermachine run made with the resulting stock, are given, together with the account of cooks and experimental papermachine tests carried out at the Forest Products Lab. An attempt to cook second cut cotton linters by the sulphite process was unsuccessful. The results of these and previous tests. See Pulp & Paper **17**, 1072, Dec. 11, 1919, **18**, 80, Jan. 22, 1920. It is shown that carefully prepared and handled second cut cotton linters which are free from dirt can be pulped with the ordinary soda pulp equipment with an economy of chemical consumption not to exceed 10 lb. of NaOH per 100 lb. of bone-dry fiber. This represents less than half the amount required in the reduction of wood. Cotton

linter pulp can be economically bleached with 2 per cent of 35 per cent available bleaching powder which is less than one-sixth the bleach required by ordinary woodpulp. The advantages of second-cut linters over cotton hull fiber are: increased yield of pulp of 15-20 per cent based on the weight of bone-dry fiber, and 50 per cent of finished paper; a saving of 50 per cent in NaOH and of 25 per cent in bleach consumption; presence of cooked hull fragments in hull fiber pulp, which react similarly to woodpulp with Herzberg's stain and which would probably be detrimental to the value of the pulp if it were used for chemical purposes; greater strength of paper made of cotton linter pulp owing to its greater fiber length.—A. P. C.

**A-3. The distribution of certain chemical constants of wood over its proximate constituents.** W. H. Dore, Univ. of California, Berkeley, Cal. J. Ind. & Eng. Chem., **12**, 472-6, (1920). A study is made of the distribution of the groups contained in redwood which yield furfural, acetic acid, and methoxy, with the object of learning their relation to the constituents cellulose and lignin. About half of the furfural-yielding groups are associated with the cellulose, but only a small amount with the lignin. The portion present as true pentosan is hydrolyzed and removed during chlorination. The acetic-yielding groups are partly associated with the cellulose, much less so with the lignin. A small amount appears to be detached from either. The results are not conclusive in view of the small amount present in redwood and the analytical difficulties. In the case of coniferous woods acetic acid probably need not be considered as a proximate group. The methoxy groups are wholly associated with the lignin. They may be partially split off from it by acid hydrolysis. In the summative analysis of coniferous woods, all of the acetic-yielding and methoxy groups and part of the furfural-yielding groups may be disregarded as already accounted for in the oxy groups and part of the furfural-yielding substances contained in the chlorination washings and representing hydrolyzed pentosans should be estimated.—A. P. C.

**A-3. Plants suitable for papermaking.** Felicien Michotte, Bull. Soc. Ind. Rouen, **47**, 444-9, (1919). Art. reviewed by Jean Letorre in Rev. Univ. Papeterie, (See Pulp & Paper, **17**, 1112, Dec. 25, 1919). A list is given of 55 so-called weed grasses, both terrestrial and aquatic, which could be used for papermaking. Very promising preliminary tests were made with flax stalks which had received a new retting treatment (by decortication of the flax, followed by a one hour's treatment without pressure); but these have not yet been concluded.—A. P. C.

**A-3. New source of pulp.** (Papyrus) Paper, **26**, 407, (1920). A mill has been installed in Zululand and machinery is being installed with a view to producing paper pulp from papyrus grass.—A. P. C.

**A-4; L-5. The determination of the quality of spruce sulphite.** J. G. Varlot, Papier, **23**, 49-52, (March 1920). For the manufacture of artificial silk, the chemical compositions of the pulp is the most important consideration, while for papermaking the felting quality,

strength and flexibility of the fibers are also important. The following determinations give an insight into the quality of the pulp. 1) Moisture, either by drying or by distilling with a mineral oil, giving the amount of actual pulp. 2) Waxes, gums and resins, either by extraction, (preferably with trichloroethylene) or by solution in cold 5 per cent NaOH and precipitation with EtOH. 3) Lignin, which is always present in unbleached sulphite and furnishes an indication as to the bleaching quality. It may be estimated indirectly by determining the furfural, methoxy no., acetic acid no., consumption of Cl on bleaching, or it may be tested for qualitatively by means of various organic and inorganic reagents (Cl, I in KI,  $Cr_2O_3$ ,  $KMnO_4$ ,  $Fe_2Cl_4+K_2Fe(CN)_6$ , phloroglucine, phenylhydrazine, aniline salts, etc.). It may be determined, directly by dissolving in 4:1  $H_2SO_4$  and comparing the color with that obtained with a standard sample. 4) Cellulose, by Cross and Bevan's chlorination method. 5) Bleaching quality, by determining the amount of Cl required for bleaching. 6) Ash. 7) Free acidity,  $SO_2$ , and sulphites. 8) Cu no., which indicates the amount of hydro-cellulose.—A. P. C.

**A-14. Strength test for paper. The Elmendorf Tearing Tester.**—Amin Elmendorf, Paper, 26, 302-8, (1920). According to Sidney D. Wells the difficulties encountered in determining the tearing resistance of paper are: 1) The tearing resistance of paper varies greatly in different parts of the sheet and any device that would apply a varying load by means of a spring, a pendulum or other arrangement may possess so much inertia that after the tear has passed a strong spot the momentum of the load would carry it through the adjoining weaker area without registering the strength thereof; 2) The variation of paper is such that it seemed to be necessary to use an integrating attachment to measure work rather than force and the consequent complications with the probable expense necessary to develop and manufacture such an instrument discouraged further work. 3) The force required to tear a sheet of paper is so small that irregularities in the action of most types of instruments tried caused an error which amounted to a considerable per cent of the total force and vitiated the value of the results. The Elmendorf tester actually measures a change in potential energy brought about by tearing a given length of paper. This is evidently equal to the work required to make the tear and this divided by the length of the tear gives the tearing force per unit length. The tearing force is obtained by means of a pendulum which is raised to one side and allowed to fall, thereby tearing the paper through a fixed and definite length by means of a string and pulley. The initial angle and length of tear are constant. The tearing strength can be obtained by reading the final angle, i.e., the angle after the tear has been made, and referring to a suitable table; or the arc on the instrument may be calibrated to read the tearing force directly. The instrument gives more constant values than the usual methods of determining tearing strength.—A. P. C.

**A-15; K-8. Reactions of cellulose with salts and dyes.** Jessie E. Minor, Ph. D., Paper 26, 584-7, (1920). The author brings forth arguments based on the residual valence theory to prove that: 1) The theories that cellulose and dye are held together mechanically, or that a definite chem. compound is formed in every case, are untenable. 2) The theory that dye and cellulose form a solid solution is not in keeping with the

laws of physical chemistry. 3) The union between dissolving salt and cellulose, as well as between cellulose and fixative, mordant or dye, is due primarily at least, if not entirely, to absorption. 4)  $ZnCl_2$  dissolves cellulose because it is capable of being absorbed the cellulose cannot be quantitatively recovered. 5) not a decomposition of the cellulose. 6) The action of strong  $H_2SO_4$  on cellulose is not the formation of a true solution, or even of a true colloidal solution, since the cellulose cannot be quantitatively recovered. 6) The amount which a given dye is absorbed is directly related to the primary and residual affinities carried by all of the particles in the dye solution. A highly charged solution, whose charge is the same as that of the dye particle, decreases the absorption of the dye, one whose charge is opposite to that of the dye increases the absorption. 7) Basic dyes, theoretically, should adhere to cellulose better than most acid dyes because the acid dyes are continuously stripped by the stronger hydroxyl ions in the solution. 8) Besides the foregoing considerations, the adherence of dyes in woodpulp is influenced by the presence of lignin, or by the hydration, hydrolysis or oxidation of cellulose in large or small amounts, and any of these factors may exercise a decided influence on the validity of the foregoing conclusions.—A. P. C.

**A-7. Limestone analysis.** W. E. Byron Baker, York Haven Paper Co., York Haven, Pa., Paper, 26, 328-46, (1920). A discussion of the importance of the various mineralogical and chem. characteristics of limestone from the point of view of bisulphite liquor making, comprising insoluble carbonaceous matter,  $SiO_2$ , insoluble inorganic matter, Fe as FeO and Fe  $2O_3$ ,  $Al_2O_3$ , CaO, MgO, alkali metal oxides,  $CO_2$ ,  $SO_2$ , S present as sulphides, hygroscopic (surface) moisture, crystal or combined H<sub>2</sub>O, the form in which the CaCO<sub>3</sub> exists (calcite or aragonite) and the form in which the MgCO<sub>3</sub> exists (magnesite or dolomite). The methods of analysis are described in detail with special emphasis on the refinements required for obtaining accurate results. (See Pulp & Paper, June 24, 1920.)—A. P. C.

**A-9; H-1. Analysis of electrolytic bleach.** Anna Klughaupt and Jessie E. Minor, Paper 26, 683-5, 688, (1920). One of the great advantages of electrolytic bleach over bleaching powder is uniformity of product. A comparison of the arsenate and thiosulphate methods for the analysis of available Cl in bleach showed the 2 to give practically identical results when properly carried out. Chlorates, in the proportions found in bleach, do not affect the bleaching of the pulp, and, from the standpoint of the papermaker, need not be considered. A control method is described consisting in heating a mixture of bleach, dilute HCl, and KI in a sealed tube to 100 C for 1 hr., cooling, opening, and titrating with  $Na_2S_2O_3$ ; and the advantages and accuracy of this method are discussed. The only real difference between stored and fresh bleach is in the CaCO<sub>3</sub> content. Higgins has shown that in the bleaching action of bleach the reaction is always unimolecular, which must mean that O is directly released from the HCl present, and that this O then rapidly reacts with the coloring matter.—A. P. C.

**A-14. The determination of starch in paper.** Oliver Kamm and Frank H. Tendick, Paper, 25, 460-1, 1919; Paper, 23, 55-6, (March 1920).—A. P. C.

**B-3. Aerial protection against forest fires.** Paper, 26, 736-7, 740-2, (1920). A description of the aerial forest patrols in the U. S. during 1919, and of the great advantages of this form of patrol.—A. P. C.

### T. A. P. P. I. COMMITTEE PLANS LIBRARY OF PAPERMAKING.

The secretary of the Technical Association of the Pulp and Paper Industry has issued a letter from the chairman of its Committee on Bibliography in which mention is made of the intention of the Association to build up and maintain a library of papermaking, which shall be available to members of the Association by a lending system. The Committee on Bibliography, of which Charles J. West, with Arthur D. Little, Inc., 30 Charles River Road, Cambridge, Mass., is chairman, makes a special appeal at the moment for advertising literature, reprints and books bearing upon the pulp and paper industry. The text of the letter which is addressed to all members of T. A. P. P. I. follows:

#### A Library of Papermaking.

To Members of The T. A. P. P. I.

All of us, from time to time, notice titles of books, pamphlets or catalogs which we feel would be very interesting reading, and which might contain the answer to one of our problems. If we knew that we could write to one person, and either secure the publication, or information as to where it might be purchased or borrowed, we would feel more inclined to follow up these leads. The Committee on Bibliography proposes, therefore, to attempt such a service for the members of the Technical Association. Our idea is to build up, as rapidly as possible, a library of papermaking, which would be available, through loans, for a limited period of time, to the industry.

Our beginning must necessarily be small, as books are very expensive. As the Association grows in numbers, we hope that the Executive Committee will be able to appropriate a definite amount each year to the building up of such a library. Meantime, we must depend upon the generous cooperation of our friends in the industry. We have had such cooperation on the part of a number of manufacturing organizations, who have sent us their advertising literature, which is much more than mere advertising.

This first letter is addressed particularly to those who are in a position to send us advertising literature, pamphlets, reprints and books bearing upon the pulp and paper industry. From time to time lists of accessions will be published, and distributed to the members of the Association. In this way they will be kept in touch with the recent developments.

May we ask the hearty co-operation of all those interested in the industry? Please send us your publications, and also names of books, pamphlets, catalogs, etc., which you feel properly belong in such a collection. These will be secured as far as possible and made available to all. It is obvious that success in such an undertaking can come only through the assistance of the entire industry.

Clarence J. West, c/o Arthur D. Little, Inc., 30 Charles River Road, Cambridge, Mass.

In this connection it is appropriate to mention some of the publications of the Association which are available from the Secretary:

#### Literature Issued by the Technical Association.

Among the reprints and special papers which are still obtainable by purchase from the Secretary of the Technical Association of the Pulp and Paper Industry are the following:

**The Creative Workman.** This is an account of pulp and paper mill operations showing how production was increased and an improved esprit de corps cultivated by the keeping of records of production and

efficiency. It is a pamphlet that should be accessible to every mill executive and foreman, to say nothing of the workers themselves. (25 cents).

**"Hand Made Paper and Its Water Marks."** This is a bibliographical list of works dealing with the manufacture of hand made paper and the water marks in hand made papers. Descriptions of the books are given and these are of special value for library purposes. (25 cents).

**"Forest Products Statistics."** Forms an invaluable finding list for the records of government publications, which are sources of statistics on forest products. It includes both original and secondary sources and the names of the various offices in Washington from which tabulations may be obtained. (25 cents).

**"Government Paper Bibliography."** Is a reference list of government documents on pulp and paper which are published by the Government Printing Office, Washington, D. C. (10 cents).

**"Technical Association Papers, Series II."** This is a compilation of papers and addresses delivered before the Technical Association of the Pulp and Paper Industry, which includes a complete descriptive list of books and periodicals pertaining to pulp and manufacture. Included in it are articles on Paper Making (Clays; Cotton Linters Pulp; Soda Mill Problems; Tearing Test for Paper; Tests for Sulphite Liquor; Heat, Light and Power Problems; Accounting Systems for Power Plants; Mill Lighting Systems; Judging Character of Applicants for Positions; Woodpulp Grinding Methods, etc., (\$2.00).

**"Paper Testing Methods."** Is a practical treatise on the analysis of paper and papermaking fibres as well as the leading materials in ordinary use. Formulas for stains and chemical reagents are given and there is a chapter on the fibres used or proposed for use in papermaking. (\$1.00).

Orders should be addressed to Mr. T. J. Keenan, Secretary, 542 Fifth Avenue, New York.

### THE LATE MR. JOHN FORD.

A pioneer of the pulp and paper industry passed away last month in the person of Mr. John Ford of Portneuf. Mr. Ford followed the business of paper making from his youth having had his training in his father's mills at Portneuf. He saw the first ground wood pulp made in Canada by the hydraulic process and built the first successful pulp mill in Canada at Glenford, Portneuf County, which was in operation until a few years ago. Although the pulp and paper industry has developed tremendously of late years he kept pace with it and was identified in the construction of a number of mills in the province. Mr. Ford was also an Engineer and an inventor of marked ability and many of his inventions are now in general use in pulp and paper mills throughout the country. His death after a short illness will be felt considerably by the large circle of friends and business acquaintances who admired him and respected him for his sterling worth and unswerving integrity, and for his kindness of heart he will be long remembered.

If top-notch effort yields you no happiness, there's something wrong either with you or your efforts. Sit down and do some analyzing. — B. C. Forbes.

"The Safety Habit is contagious. Be sure to catch it," says the Safety League.



# PULP AND PAPER NEWS

Mr. I. H. Weldon, of the Provincial Paper Mills, Limited, and Mr. N. L. Martin, Secretary of the Canadian Paper Trade Association, Toronto, leave next week on their annual hunting trip on the French River.

Pulp and timber limits aggregating 200 square miles have been put up for tender by the Ontario Government. The limits are scattered throughout the north country, running from small bits of one or two square miles to limits of 72 square miles. There are two of the latter size, one in the Townships of Kimberley and Cairo in Temiskaming, and another in Thunder Bay, in the district west of the Townships of Hele and Sterling. There is one limit of 30½ miles in the Townships of Ryan and Palmer, Algoma, and one of 15 square miles in the north half of McFadden Township, Temiskaming. The balance are small limits, for most part adjoining limits of operating companies. In the past these would have been disposed of without tender, but under the new policy of the Department of Lands and Forests they must be tendered upon in the usual way.

At the annual meeting of the Association of Canadian Advertisers in Toronto this week, Vice-President W. G. Steward declared that the time had arrived to impress upon the publishers the necessity of charging more for their product. "We all know that there is a world-wide paper shortage", said he, "but so far the advertiser has had to pay the larger proportion of the increased costs, and many of us believe that the time has now arrived for the reader to pay his fair share of the increase in the overhead expenses of the publisher." President D. G. Clark and Vice-President Steward both emphasized the need for more color work in advertising. C. A. Crabtree, president of the Crabtree Company, gave an address on "Art work and engraving problems and how to meet them economically". Film, billboard and other advertising mediums were discussed and F. T. Stanford of the Canada Life Assurance Company gave an address on "Co-operative Institutional Advertising." A feature of the meeting was an exhibition of advertising art work.

The Adams Cellboard Company, Limited, has been incorporated, with power among other things to carry on business as printers, publishers, paper makers etc., and with a capital stock of \$400,000. The new company takes over as a going concern the business and assets of the Adams Cellboard Company, box makers, etc., on Defries Street, Toronto.

A charter has been granted the Pembroke Timber, Tie & Pulp Co. Limited with head office in Pembroke, Ont., with power to manufacture and deal in lumber, ties and pulpwood. The mills of the company are located at Makwa on the C. N. Railway. Mr. W. H. Bromley is the manager of the organization. He is well known to the trade and previously was engaged in the wholesale line. He served three

years overseas with the Canadian Forestry Corps. Another member of the company is Major A. J. Miller, who was officer commanding of a Forestry Corps in France and who is now engaged in the milling trade in Pembroke. Mr. J. S. Fraser is president and Mr. L. M. Chapman is secretary of the company.

A good example in creating good roads is being set by the Ontario Paper Co., of Thorold, who are large users of coal. Huge piles of cinders have accumulated and the company recently bought a three ton automatic dumping truck and now have men at work spreading the cinders on the road from the mills to meet the Stamford road which has already been cinder-paved by the township council. The Ontario Paper Co. has offered to cinder-pave many miles of roadway in and around Thorold.

Mr. A. T. Wilgress, King's Printer of Ontario, who has been on a visit to France where he saw the grave of his son Lieut. George Wilgress of the 21st Battalion has returned to his home in Toronto.

Mr. Cal Davis, for the past thirty years on the staff of the Hamilton Times and for many years managing editor of the paper, was recently presented with a gold Masonic locket. Mr. Davis, who is one of the city controllers of Hamilton, becomes managing editor of the morning edition of the Times which will shortly be issued.

It is stated that over one hundred newspaper offices have been closed in Canada during the past year either through suspensions or amalgamations owing to the shortage and high cost of paper and general advances in supplies of all kinds, including wages. On the other hand there has been a marked increase with number of weekly and monthly publications.

The Manitoba Free Press of Winnipeg has increased its subscription rates for the morning edition to 25c per week owing to the tremendous advance in the cost of producing a newspaper. In making the announcement the Free Press says that on July 1st a new labor schedule and a fresh newsprint contract became operative simultaneously, increasing the newsprint bill of the publishers by exactly 25 per cent and advancing the payroll of the mechanical department by 26 per cent. More recently the raise in freight rates has added greatly to the freight bill. All the papers published in Regina, Saskatoon, Calgary and Edmonton are now selling at 25c per week delivered.

Another amalgamation has been added to the rather long Ontario list. The St. Marys Argus has been absorbed by the St. Mary's Journal of which J. W. Eddy is the proprietor.

Proposals for an enlarged British cable service were thoroughly gone into at a meeting of the board of Directors of the Canadian Press, Limited, in Toronto this week when the decision was reached to call a special general meeting of the membership

in Montreal within five weeks to pass finally on the draft agreement for such a service, to be negotiated by the management with Sir Roderick Jones of Enters. Limited, B. C. Nicholas of Victoria was appointed director to fill the vacancy on the board for British Columbia and W. J. McNair, Hamilton, Ont., Herald was added to the Ontario and Quebec representation of the board in the place of Irving Robertson, Toronto, resigned. The Hamilton Spectator and the Hamilton Herald, both afternoon papers, withdrew their applications for morning paper franchises on the understanding that The Times is to abandon the evening field.

An interesting development in the exploitation of the natural resources of Quebec, is the statement which appeared in "L'Evenement" that a railway is to be constructed from Hudson Bay to the Seven Islands on the north shore of the Gulf of St. Lawrence by interests connected with the pulp and paper industry. The statement also mentions that pulp and paper mills will be erected at Seven Islands and at other points along the route where there are important water powers. Steel works also are to be erected at Chicoutimi and at Quebec. It will be recalled that there is already a pulp mill at Seven Islands which was recently acquired by British industries.

An employee of the Spanish River pulp and paper mills at Sturgeon Falls, Ont., Henri Lacroix, recently had a very strange experience. Last May he was thrown into the mill race and besides having several ribs broken, a shoulder dislocated, and being nearly drowned, he added to nature's equipment by swallowing the stem of his pipe. This article remained in his stomach until he was awaiting an operation to remove it, when he felt the stem ascending and was able to catch hold of it with his fingers and pull it from his throat.

In an address before the Rotary Club of Vancouver, Mr. James White of the Commission of Conservation, stated that in order to provide somewhat more than 2,000,000 tons of news print to Canada and the United States annually, 1,000 square miles of forest land must be stripped of mature trees each year.

The Laurentide Co., will have two more satisfied and permanent employees when H. Downes and J. McDonald received loans from the town of Grand-Mere for assistance in building their own houses. The grants are for \$3,600 each.

A large operator in pulpwood in Eastern Canada, is of the opinion that there will not be any rapid decline in the price of pulpwood. This opinion is based on the present condition with regard to transportation facilities, that the demand is consistently urgent and although there has been a slight easing of contracts for a long time, this concern is completely sold out for the total output until 1921 at the highest price ever obtained. This view is held by many other pulpwood men although there are some who think the production this winter will more than meet the immediate demand. All seem to agree, however, that the situation depends very largely on development in transportation conditions.

W. F. Bishop, Ltd., of Montreal, are doing foundation and general construction work for the Belgo-Canadian Pulp & Paper Co., and are building a dam for Bird & Son, at their mill near Pont Rouge. The Bishop Company are purely construction engineers and leave the

consulting part of the business to those who make that a specialty. This gives them the better opportunity to concentrate on construction.

Mr. John C. Corcoran has severed his connection with Dominion Engineering Works Ltd., and has opened an office at 510 Dominion Express Building. Mr. Corcoran is in negotiation with a number of firms to handle their lines for the pulp and paper trade and plans to manufacture in Canada a number of lines that are not manufactured here now. Mr. Corcoran is well known in the paper trade, having been for a number of years with Rice, Barton & Fales before going with Dominion Engineering Works about two years ago.

#### CLARKE BROS.' MILL DOUBLED IN SIZE.

A circular issued by Clarke Brothers, Limited, now building a pulp mill at Bear River, N.S., for which a bond issue was sold some months ago, announces that delays have occurred in the construction program, that the buildings are now nearing completion and the machinery is being rushed forward, and set up as fast as it arrives.

"As far as our pulp mill is concerned," says the circular, "the delays have been beneficial to the company, for during this period the permanent shortage in kraft pulp has become more accentuated, and has brought home to us more forcibly the wisdom of increasing the output of our mill. The original mill was at the rate of 30 tons per day. The extension we are now installing will give us a capacity of 50 tons per day. Although we have been able to double the capacity of our mill, we only found it necessary to increase our indebtedness by \$250,000, making our total indebtedness \$1,250,000, which will more than complete these additions and improvements and provide working capital as is required to carry on under this intended program. The additional finances have been arranged."

According to a report from St. John, N.B., the old Mispec pulp mill has been entirely dismantled. The brick, machinery and other material has been carried across the Bay of Fundy to the big pulp plant of Clarke Brothers, Limited, erected at the mouth of the Bear River.

#### IMPROVEMENTS IN THE ABITIBI FINISHING ROOM.

Within a very short time the hauling of the rolls at Iroquois Falls will be done entirely without the use of hand trucks.

A narrow gauge track and electric trucks are on order and some of the equipment has already arrived.

Some of the large Toledo scales are now installed and others are to be put in before long.

A narrow gauge track with dolly trucks is to be put in to put the rolls of paper of the same length together, and electric trucks will deliver the rolls to the railway cars. These trucks will up-end the rolls themselves.

Another thing which will make for greater efficiency if it is worked out is the scheme of putting on the heads with the rolls in a horizontal position. Plans for this are now being worked out and it is hoped before long to have a satisfactory method of doing it in operation.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Oct. 23—Although there is a lessened volume of business in the printing trade it is believed to be only of a temporary nature. In contrast to this is the satisfactory trading in paper by the jobbers, some of whom are now booking orders for January delivery, although they admit they are taking more or less chance on stocking up for future delivery from mills, and at the same time declare that the outlook justifies their action. Deliveries from the mills are coming in more liberally than heretofore but stocks in some lines, notably book papers, are still low and the product is very hard to get. United States paper makers are beginning to offer tonnage in many lines exclusive of book paper and there appears to be a general loosening up of paper supplies, although prices of all paper products remain steady. One prominent Toronto jobber points to the possibility of ascending prices again should the spirit of unrest in mining and some productive labor activity spread to Canada thus reducing the driving power behind paper production in this country. The natural result of any strike trouble in the mines, he said, would be to influence the output of the paper industry with the further corollary of still greater under-production. While this eventuality is not anticipated seriously it is mentioned as one of the possibilities that the trade may have to face.

A feature of the jobbing trade is that there are comparatively few big orders coming in but the total of smaller sales has resulted in a larger volume of business than under the era of big buying. The policy of the printing and publishing houses appears to be that of buying from hand to mouth but there is still a great demand for paper of most classes. Every scrap of stock in the job printer's plants is being used up and it is estimated that it will not be very long before the stock rooms are cleaned out, which should result in increased demand upon the jobbers and the mills. It is estimated that January next will see a cleaning out of all small stocks and that buying will be renewed on a big scale. The mills are not booking any of the new making for delivery before January or February.

CATALOG DEMANDS.—According to the statement of one Toronto jobber the demand for stock for catalog work is just as heavy as ever, although it was thought that there would be a slight falling off in the call for this class of stock in the near future. A case was cited where a big catalog manufacturer in Toronto placed an order in England for his stock during the shortage here and after considerable delay he got it, but it turned out to be poor stock and he was left with it on his hands, which means that hereafter he will take his chances on the domestic supply. It is known that salesmen for English houses have gone back home with orders from Canadian houses for papers but the matter of delivery is entirely a different matter and while the orders were placed practically no deliveries

have as yet been made and none are looked for in the immediate future.

WRAPPING AND BAGS.—The demand for these lines keeps up and the jobbers report that stocks are hard to get from the mills. Very little is coming through and the jobbers have more business than they can get stock to fill, although in some lines of wrapping paper there has been a slight falling off in demand. While the demand for paper bags is good it is noticeable that the jobbers' customers are not buying any more than they absolutely have to.

MILL MACHINERY.—Paper mill machinery dealers in Toronto say that they are not getting any better deliveries of the machines they are handling and that there has been no falling off in the demand for paper cutting machines and other equipment supplied the mills. There has been no slump in the trade and none is looked for.

PULPWOOD.—The pulpwood market is firm in price at the present time but some dealers see signs of a slump in prices by the time the snow comes. One dealer expressed the belief that rough wood would go down \$2 a cord within the next six weeks, although he did not anticipate any material reduction in the price of peeled wood. The situation has so shaped itself that but few dealers are buying pulpwood for speculative purposes. One leading Toronto firm which deals in pulpwood and lumber told the Pulp and Paper Magazine that having bought and produced all the wood covered by its contracts were now going to play safe and buy no more, although the firm is in receipt daily of letters offering wood for sale. The firm, however, is not in the market for more wood. There appears to be considerable activity in the woods, farmers, settlers and others being engaged in taking out the wood in considerable quantities. Cordwood is exceedingly scarce and it is estimated that about five hundred cords would cover the available supply in the woods, although there is some in the wood yards. During the coal shortage of a couple of years ago woodsmen were urged to get out all the wood they possibly could and when the coal situation righted itself the consumption had kept pace with the production. Comparatively little cordwood has been cut since then and hence the shortage at the present time. If the Canadian woodsmen are going to be called upon to jump into the breach now that the world's coal supply is threatened by strikes in various countries it may mean a big call for cordwood and a consequent lessening of the production of pulpwood.

WHOLESALE STATIONERY.—Conditions in the wholesale manufacturing trade are good as far as business goes but difficulty is being experienced in getting raw stock. The fact of the mills being unable to get ground wood and sulphite is holding up the paper and board for the stationary manufacturers who report that it is very hard to get delivery of stock. In one instance, a leading Toronto firm placed orders at the beginning of the present year for delivery in July and the stock

is not yet to hand. There is a great shortage of linen finished boards and there is none in sight. The labor situation is slightly easier with the exception of certain branches of skilled labor, although the manufacturers are still finding it hard to get labor of the right kind. The demand for envelopes, blank books, writing pads and papereries keeps up and the coming Christmas trade promises to be good. The papereries trade is booming and one manufacturer reports that his firm has already shipped from seventy five to eighty per cent of his orders for the Christmas trade while designs are being worked on for them following Christmas. There have been practically no cancellations of orders and all branches of the wholesale stationery trade are thriving.

The new plant of the Dominion Cone and Folding Paper Box Company, which is being erected at Ingersoll, nt., is about completed and it is expected that manufacturing operations will commence in about a week's time, although the portion given over to box making will not start for about ten days yet. It is stated that the company is ready to start operations with a large number of orders on hand and that prospects for the future are very bright.

**NEWSPRINT.**—A visitor from New York interested in publishing stated that the price for spot lots of newsprint had dropped in a short time from 15 to as low as 7½ cents per pound. The view expressed was that the paper situation could not wholly escape the fate of the sugar market, in which high prices attracted the commodity from various parts of the world. This should be modified, however, by the statement that only a few parts of the world are in a position to export paper. One Toronto paper dealer has the idea that the dumping of over two hundred thousand tons of newsprint from Finland on the American market, as reported in the daily press, is going to queer the Canadian market and that pulp and paper circles would soon see a drop in wood and sulphite.

**HEAVY CHEMICALS.**—This market is still very tight.

Alum if anything harder to get.

Bleaching powder about the same. Some English powder is available in carload lots, from 5 to 6 weeks delivery at 7 1/8c, Toronto, duty paid subject to possible delays due to spread of coal strike to transport workers.

Soda ash, 58 p. e., can be had in carlots at 3c, at Toronto.

Salt cake and niter cake are scarce.

Sulphuric acid may be easier towards the end of the year when the product of some new units will be on the market.

### NEW YORK MARKETS.

New York, October 23 (Special Correspondence).—The outstanding development in the paper and board markets this week has been a sharp drop in box board prices. One of the leading producers in the Eastern States has repeatedly cut quotations, presumably in an effort to secure enough business to keep his machines running full, and while other mills have not generally followed this procedure, the actions of the one manufacturer have brought market prices down to substantially lower levels. Plain chip board is selling at \$85 to \$95 per ton f.o.b. mills, as compared to \$110 to \$115 the ruling market quotations previously, while news-

board has dropped in price to \$95 to \$100 a ton, against former prices of \$120 to \$125. The reasons behind the decline in board prices are several. First, mills have been getting very little new business during the past few weeks. The paper box trade is in the doldrums owing to the dullness prevailing in most lines wherein boxes are used, and boxmakers have placed few orders for board, most of them having stocks on hand sufficient to cover their wants. Secondly, sharp declines in old paper stock have enabled board manufacturers to buy raw material at considerable lower prices in a long time, and some producers figured this as justifying their lowering prices on boards. The mill which has led in reducing quotations has a reputation of going to any lengths to secure ample business to keep running full, having pursued this same policy at frequent intervals in the past. Most other boardmakers are holding off in trying to get business for the present, evidently with the idea that when the one mill in question has booked enough orders to keep it operating at maximum for a time, they will then be able to obtain orders at more favorable prices. At the same time, market prices, at least for the moment, have been well established at the low levels named above, and obviously consumers are refusing to buy at other figures than these.

There is a feeling common in the trade that better times are in store for board manufacturers and dealers than they have lately been obliged to contend with. It is a fact that retailers all over the country have held off in placing orders for paper boxes for the Christmas holiday season, and it is believed that they will necessarily have to begin covering these requirements in the very near future, or else go without the boxes. Board men, therefore, look for a period of pretty brisk buying of boxes during the next several weeks, and for a resultant livelier demand for box boards. The decline in board prices is in direct line with the recession in waste paper costs, and is viewed as a healthy market condition. Board mills are today obtaining raw material at reductions of from \$25 to \$25 per ton from the prices they were obliged to pay a short while back, and the lower prices on boards are looked upon in many quarters as a natural readjustment of prices on the manufactured article.

The remainder of the market has undergone no broad changes. Considerable discussion is being engaged in among paper manufacturers and jobbers regarding the possibilities of Germany and Finland sending large tonnages of newsprint to America. Late reports are to the effect that both Germany and Finland are preparing to ship heavy amounts of print paper to this country to sell at prices under the present value of domestic newsprint. The arrival of two prominent paper manufacturers from Germany, who have given out interviews in this connection, has served to whip up interest. Sentiment in the trade here is that there is small likelihood of enough newsprint being sent to America from Europe to materially affect the market situation. Some factors express the opinion that the quantity of newsprint received from Europe will only go to make up the lighter supplies the United States will likely get from Canada owing to the larger exports of the Dominion to England.

Prices on spot lots of newsprint hold at at around 10 cents a pound, with an occasional sale reported, most often of imported paper, at a quarter of a cent less than this figure. The contract basis is maintained firmly at 6.50 cents f.o.b. mills.





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INQUIRIES SOLICITED.

Book papers are in a slightly easier spot position. Some mills have lowered prices half a cent per pound for prompt shipments, and yet there is but little book paper of any kind available; mills as a rule being sold up for the balance of the year on contract. Wrapping papers also have eased off a trifle in the open market. No. 1 kraft wrapping is to be had in some quarters at 12 cents, while No. 1 jute is quoted down to 14 cents and No. 1 fibre at 8.50 cents. That all manufacturers are not reducing prices is shown by the fact that one of the leading producers of kraft wrappings only a few days ago advanced all prices half a cent a pound. Prices on paper of any and all kinds today depend almost wholly on the position the mill quoting is in the way of having business. If it is well booked up with orders, it is maintaining quotations and sometimes advancing them; if, on the other hand, it is looking for orders, it is cutting prices somewhat.

**GROUND WOOD.**—There is a comparatively narrow demand for ground wood yet prices are well sustained, and buyers seeking mechanical pulp at concessions are meeting with scant success in finding it. As an example of the firmness of ground wood values, a New York dealer told of canvassing the trade locally this week in search of domestic spruce pulp of prime quality for prompt delivery and of having to pay \$122.50 a ton, which was eventually turned over to a consumer at a price of \$125. This latter figure represents the value of prime quality ground wood today. There are offerings in some cases down to \$110 but pulp available at this level is foreign pulp and does not begin to compare in quality with the domestic product. Moreover, only certain mills, principally board plants, can use this foreign ground wood.

**CHEMICAL PULP.**—There is a firm tone to prices on some grades of chemical wood pulp and easiness in other parts of the market. Kraft pulp is weakening fast and new low prices are being quoted, domestic kraft of good No. 1 quality being offered for prompt shipment at 6.50 to 6.75 cents, and Scandinavian kraft down to 6 cents. Unbleached sulphite is easy also though not so much as kraft. Newsprint sulphite is selling at 7.50 cents, which records a decline, and easy bleaching sulphite of domestic origin at 9 cents. Bleached sulphite remains strong in price and it is still a problem to locate sizable tonnages for quick delivery or for shipment sometime hence. Domestic bleached is quoted at 12 cents upward at mills and foreign bleached at 13 to 14 cents. Receipts of pulp from Scandinavian countries continue fairly large, but

there is a good deal of talk concerning the poor quality of much of this pulp and apparently there is not as active a demand for it as importers probably anticipated.

Arrivals of foreign pulp at New York this week included 4,250 bales from Christiania, 2,100 bales from Gothenburg, and 4,300 bales from Hamburg.

**RAGS.**—Little trade activity of importance is current in papermaking rags. Mills are keeping out of the market, presumably having enough supply on hand to cover their present wants, and in the absence of actual transactions, prices are mainly nominal. New cuttings hold moderately steady in price for the reason that such rags are scarce and that production of them is not heavy enough to create any material surplus, but old rags continue to decline and it is a question just how low buyers can obtain supplies. Roofing rags have sunk to 1.75 cents a pound at shipping points for No. 1 packing, and there have been reports of purchases at even lower levels, while old thirds and blues are available to mills at 4.50 cents for repacked stock No. 1 repacked white rags at 12 cents.

Receipts of foreign rags at this port during the current week included 2,454 bales from Havre, 436 bales from Hamburg, 460 bales from Bordeaux, 176 bales from London, and 68 bales from Hull.

**PAPER STOCK.**—The decline in waste paper prices has continued uninterrupted throughout this week and values have sunk to levels representing differences of \$20 to \$25 a ton from the levels ruling prior to the break in the market. No. 1 mixed paper is now quotable at 1.25 cents, folded newspapers at 1.50 cents, old No. 1 kraft at 4.75 cents, white news cuttings at 5.25 cents, heavy magazine stock at 2.50 cents, No. 1 hard white shavings at 9.25 cents, and No. 1 soft white shavings at 8.25 cents. High grades hold comparatively steady although they have sagged to some extent, but low qualities have broken with a rush probably never before witnessed. Consuming mills are doing little buying, evidently figuring it a better policy to refrain from absorbing supplies with prices tumbling as they are. There are reasons to believe that prices have reached a point now where they are not likely to recede much further. Packers and dealers contend they cannot produce stock at a profit on prevailing prices and many of them have shut down their establishments. The situation at best is greatly unsettled and it is not likely to become definitely readjusted until mills resume buying on something near to a normal scale.

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OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

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## TABLE OF CONTENTS

### Editorial:

- Will prices drop in sympathy or by force? . . . . . 1129  
— Making prohibition prohibit . . . . . 1130

### Special Articles:

- Human conservation, a national necessity . . . . . 1131  
Six month's exports exceed those of previous year. . . . . 1133  
Press comment on a government paper mill . . . . . 1135  
The belching smoke stack . . . . . 1137

### News of the Industry:

- Good work, Abitibi! . . . . . 1132  
U. S. newsprint news. . . . . 1134  
Will carry on pulpwood operations . . . . . 1138  
Let the buyer beware . . . . . 1138  
Optimism among box makers . . . . . 1139  
Safety first in England . . . . . 1139  
British Technical Section met . . . . . 1140  
Abitibi bonds payable in New York funds . . . . . 1140  
British trade news . . . . . 1141

- Frasers buy Minto coal areas . . . . . 1141  
Was ex-manager of Parsons' London office . . . . . 1141  
Making pulp and paper machinery . . . . . 1142  
Helin examines Nelson project . . . . . 1142  
The technical course at Iroquois Falls . . . . . 1142  
Boost for Vocational Training . . . . . 1143  
Changed their office . . . . . 1143  
Getting rags from Europe . . . . . 1143  
United States notes . . . . . 1146  
Pulp and paper news . . . . . 1147  
E. H. Bronson dead . . . . . 1148  
Ewing in charge A. W. P. Co.'s New York office . . . . . 1148

### Miscellaneous Information:

- A safety limerick . . . . . 1134  
Novel on pulp industry . . . . . 1139  
Publications in Quebec increase . . . . . 1143  
New paper machines 1920-1921 . . . . . 1143  
Review of recent literature . . . . . 1144  
Get valuable seeds . . . . . 1145  
The importance of a good example . . . . . 1154

### The Markets:

- Canadian trade conditions . . . . . 1149  
New York markets . . . . . 1150

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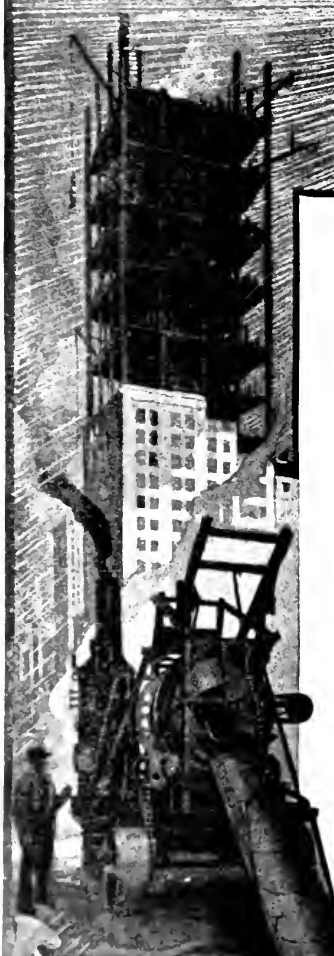
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## EDITORIAL



### *WILL PRICES DROP IN SYMPATHY OR BY FORCE?*

At this time, when prices in many commodities are on the down grade, or at least, show signs of declining, the question naturally arises as to what the effect will be on the products of the pulp and paper industry. In most of the cases where decreases in prices have occurred, there seems to have been a slackening of demand. This has been particularly noticeable with regard to the Textile industry. The public has simply made up its mind that it will no longer pay war prices. The result however, is not without some disadvantages as we have noted a considerable increase in unemployment in textile centres. Some mills have had to shut down, or to operate on part time, and textile workers and garment makers have agreed to a reduction in wages rather than be turned out of their jobs. There is, therefore, an obligation on the part of the public to continue purchasing necessary supplies at as nearly a normal rate as possible, otherwise there is sure to be considerable dis-organising of industry, with a resultant disadvantage to all concerned. In other industries however, the demand still keeps pace with, or in advance of production. The pulp and paper industry is one instance, and materials for building is another. There is not only a scarcity of many lines of building material, but there is a marked scarcity of competent labor, consequently it is not likely that building costs will decrease for some time to come; some contractors estimate the period of continued high building costs to be about three years. It is predicted that the shortage of houses cannot be made up in less time than that.

In the case of the paper industry, there are also a number of factors which have to be considered. The most important of these we should give as demand, capacity of productive equipment, and availability of necessary raw materials. In some lines of paper there is a tendency to higher prices. This is principally due to scarcity of fundamental raw materials; the most noticeable instance is the market for the highest grade of paper where there is marked difficulty in getting sufficient high grade rags and the lack of this class of stock is said to be partly due to a scarcity of bleaching powder for the preparation of colored rags that might otherwise be used. The disinclination of the consumer to pay the necessarily high price for high grade stock, puts an additional burden on manufacturers of the lines which are substituted. In other lines such as book and newsprint papers, there con-

tinues to be a demand which is taxing mill capacity to the utmost and a large amount of printing is left undone which could readily be taken care of if sufficient paper were available.

The situation with regard to capacity is not confined to the paper mills but goes back to the chemical pulp mill and the grinder. It seems probable that some relief in the ground wood situation will be found before very long but through the insistent demand for this grade of stock, there is not much likelihood of an over-supply. At the present time, the prices paid for ground-wood are the highest in history and will not likely be touched again for many years. They have been supported by the extraordinary demand for newsprint which has forced the price of spot sales to twelve, fourteen and sixteen cents. At this rate it was advantageous for mills not ordinarily producing newsprint, to switch over, so as to take advantage of an unusual opportunity. The tendency has been growing, however, in the last few months, for publishers who have contracts, to use only such paper as is bought in this way. This action has considerably relieved the situation with regard to those papers that must rely on the spot market for their supplies. It has meant however, that mills not ordinarily producing newsprint, and which could only produce it at high cost, have naturally gone back to their normal grades which again began to offer possibilities of approximately equivalent profits. It is easy to see that this jumping to the other side of the fence still leaves the market short of spot supplies as the big producers have no difficulty whatever in more than filling their machines with contract orders and only those specialty mills can continue to supply the spot market as are able to produce newsprint profitably for the lower scale of spot prices that is gradually being established.

This partial easing of the spot newsprint market, and the consequent throwing of machines back into other lines of production, is at the same time relieving to some extent of the tightness that has existed in such lines as tissues, wrappings and boards where the same raw materials are required as are used in newsprint, but the market in these lines cannot go easy, or prices appreciably soft, until there is a more abundant supply of pulp. A slight slackening of business such as appears on the horizon for the next few months, at least in some lines, may bring the supply of these nearer to the demand than has occurred for some time, but a rebound toward prosperity cannot be long delayed and there is not much chance of sup-

plies out-running requirements. An instance is the present comatose condition of the board market.

In book and magazine papers there is no indication whatever of a let-up; periodicals are hard up for paper, one publisher alone being 1600 tons short and many others could use up more paper than is available. If there were a larger supply we are sure that many new productions would appear and the same may be said of newspapers and newsprint supplies. There has been marked difficulty in obtaining text books this year and there is not much relief in sight.

Most of the paper manufacturers are dependent on the output of pulpwood and from various sections of the country come tales of difficulty in getting enough men to carry on lumbering operations. It has been stated that the efficiency of workmen has increased generally of late, but it is doubtful whether many of the old time lumber jacks will be seen in the woods this winter. Even so, the wood that is required by the mills now was cut one or two years ago and the cost of producing it was abnormally high then and is still approximately at the same level because supplies had to be sent into the woods before the present tendency for a decrease in the cost of food-stuffs made its appearance. Pulpwood is a very considerable factor in determining both the quantity and the cost of the production of paper, and we are approaching a time when it will be the determining factor. Ontario and Quebec forests form the keystone of the paper industry for at least the eastern half of Canada and the United States. Public opinion is being aroused to the necessity of conserving this resource in order that it may continue to be the important source of provincial revenues that it should be. The result of instituting proper forestry policies must be to increase the price of most grades of paper or at least to maintain them at something like present levels.

Nothing has been said with regard to the price of other raw materials or the cost of transportation or labor. The paper mill receives approximately four tons of freight to each ton of product shipped out and the cost of hauling has increased just recently by 40 per cent. It is not likely that the cost of operating railways will be so reduced as to make it possible to decrease present rates very much, at least not within the next few years. As to the other raw materials such as rosin, clay, color, and adhesives, and materials of equipment and operation, their present prices are high and it is the present cost of such goods that must largely determine the cost of the product sold.

For most paper mills, the rate of wages has been fixed for another six months. This item is one of the most important factors in the cost of production. The effect of wages is cumulative, it is evident in the price of wood, coal, transportation, and equipment, to say nothing of its place in the conversion of raw material to finished produce. It is generally admitted that this is the last item of cost that can be reduced

Only continued maximum production can keep it up, however, but in most lines of paper, this is likely to be the case for some time to come.

From an analysis of factors entering into the manufacture of pulp and paper, and in view of the present and probable demands for these products, it is likely to be some time before market conditions force a decline in selling prices. The only chance we see of lower prices until demand slackens is the possibility that some manufacturers may consider it good policy to trim profits as far as safety will permit in order to announce a price cut in sympathy with decline in some other commodities and with a view of getting publicity, and perhaps goodwill, by such a procedure.

#### MAKING PROHIBITION PROHIBIT.

Referendum votes have been cast recently in five Canadian provinces on the subject of prohibition. In only one case has the result been in favor of the liquor interests. British Columbia has decided to permit the Government to deal in alcoholic liquors, but Alberta, Saskatchewan, Manitoba and Nova Scotia have cast decisive votes in favor of prohibition. Possibly British Columbia has moved in the direction of temperance to a degree; but we have no doubt that the action of the other four provinces, if properly backed up, will give much the better results. Even Quebec, which passed a modified temperance act about a year ago, has finally come around to the conclusion that the act was not being properly enforced and orders have been given, at least in Montreal, that the law be obeyed. Everybody will not be satisfied with the restrictions that require a bona fide doctor's prescription for the purchase of liquor, but many of these same people would be the very ones to object to its promiscuous sale. There are some who still believe in privileged class in a democracy; we believe there should be no privileged classes before the law. No good citizen will attempt to evade the law which a majority have passed because he thinks it is unduly restrictive of his own personal action, and at the same time expect others to obey a statute which is also designed to be a public benefit. We trust that the Government of all the provinces in Canada will have the courage to enforce prohibition laws, with at least, the same vigor that is used with regard to theft and other crimes against the public good.

#### COBWEBS.

A newspaper headline says Riordans have bought timber on the Quince River. Do you C Z difference?

A recent report from New York said that big American publishers had probably \$50,000,000 worth of paper on hand which cost them about 5 cents a pound and which they are getting ready to unload on publishers short of paper. Of all the crazy ideas! That paper will be gone, long before the price hits 5 cents again.

# Human Conservation, A National Necessity

Dr. FRANKLIN C. WELLS, Medical Director, Equitable Life Assurance Society of the United States\*

“Off Land’s End, England, there is an old house with two signs upon it, or rather one sign with two sides. On one side you read, “This is the first house in England.” You go around to the other side and you read, “This is the last house in England.” It all depends upon your angle of vision and where you stand as you read that sign what that sign means to you. It all depends upon the way you look at a subject what that subject means to you. There is a great audience here that represents a great deal. Thank God, from whatever places we have come and how we may look at the business of life through different glasses or different views or angles of vision, we are one in the fact that human life must be saved and conserved where life is lost by accident or by disease.

You employers of labor take a man and you don’t ask what he is, you don’t look underneath the outside covering and go to the inside machinery to ask the condition of the machinery there. You say, “What can you do?” You watch his production. If a man can produce, you don’t ask what is on the inside.

I have been selecting men for some thirty years and I have learned this: That you can’t tell the inside of a man by looking at the outside. You can’t tell the condition of the inside machinery by simply looking at the outside of the man. If you want to know the value of a watch, take off the cover, examine the wheels and cogs and springs inside, find their condition. We are all composed of machinery on the inside—wheels and cogs and springs. We each have a pump, we have filters, we have a great laboratory, we have a great pair of bellows, we have a telegraph system on the inside of this wonderful machinery. What is the condition of that machinery today?

In your own ease, do you gentlemen as captains of industry and employers of labor know the condition of the machinery of your men working for you in your plants today? If you don’t I want to tell you that you are losing millions of dollars from non-efficiency and non-production by men who have disease creeping over them insidiously. They do not know it themselves, but it is seen in their production, it is seen in their lives, and you do not know it until the man drops. There is a cause, and you must go back and have that inside machinery watched and examined if you would maintain production, if you would maintain the physical efficiency of your men. Watch that inside machinery just as you would watch the motor power of your automobile or the motor that runs the elevator of your building.

We take the man who applies for insurance and examine the machinery to see if that man is going to live probably his allotted life. And then we find out one other thing, we ask one other question: “How is the man that has this machinery using it from day to day?” because we die daily. There is no such thing as sudden death; causes go back over the years insidiously creeping on until the man drops. We say it is a sudden death, but it comes down through the years.

America is honey-combed today with insidious diseases, diseases that are sapping the kidney, the heart, and degenerative diseases that ruin the health. Our business men today at forty years of age are dying twenty-five per cent. faster than they died fifteen and twenty years ago. I can understand how this machine might wear out when a man is three score and ten or eighty years of age. We expect the machine to wear out then, but one thing we can’t understand from our standpoint in life is this: Why is old age today putting its bony and clammy hand on the man of forty through out this land and saying to him, “Be old at forty years of age with degenerative diseases of the heart and the kidneys and the nervous system.” Forty years of age!

This is one cause for the large number of accidents you are having in your factories. Your men have disease. They do not know it but it unsteadies the hand and the head and the heart and the eye. I don’t wonder that there are so many accidents in the factories, because we do not watch the inside machinery as we should.

Watch the human machine, watch it by a physical examination, watch it by a regular physical inspection, not to fire the man out of his job but to adapt the man to the job that the man can fill. Watch the men in your employ and give them a fair chance.

If I told you that thirty-three per cent. of our young men in this land five years ago were so defective that they could not meet the standard of Uncle Sam, you would not believe me; yet we find that to be a fact. All the armaments in the world or all the steel never could keep one enemy from our shores if the man behind the gun is a physical degenerate.

A year and a half ago an invader came to this land. We thought little of his coming. We had been warned, but we made little preparation for his coming, and it took 500,000 who made graves in America to awaken America to the fact that we must prepare to meet this invader. Influenza had been here before. Influenza had been elsewhere, and yet we waited until influenza came to lock the barn door and then we issued warnings preparing people how to meet influenza. An invader! And it is coming again and we are going to see the effects of influenza. Get ready for it.

Suppose the people of this land were divided into families of seventy-one each. And suppose I would tell you that every year from every one of those homes in this land one person would die; two people in every one of those families would be confined to the bed all the time; thirty would be sick with ad-noids, with heart disease and degenerative diseases, with insanity and indigestion and impaired hearing, malaria, tuberculosis, typhoid fever and hookworm; twenty-five would be in what we call fair health—they would be the ones that would be walking around and saying, “Thank you, I’m not enjoying very good health.” They would be the ones who would have excesses of all kinds, coffee and tea, overeating and undereating, lack of sleep. And only on thirteen out of seventy-one in each home could you put your hand and say they are in robust health.

\*Delivered before the Ninth Annual Congress of the National Safety Council.

Go to the school house, and there Uncle Sam tells us that seventy-five per cent. of the 26,000,000 boys and girls in this land today have physical impairments that are interfering with their normal development. That is a mighty important question because what America will be tomorrow depends upon the boy and the girl of today. You and I won't be here then. Your boy will be here and your girl will be here, and we find a large proportion physically defective, physically imperfect.

Japan realizes this great danger, for with a population of about 70,000,000 she has some 16,000 school physicians to keep her boys and girls in school in good order. America, with a population of 110,000,000, has about 1,500 school physicians to look after the boys and girls in this land.

Back of the schoolhouse we find the home, and back of the home we find the mother and the baby, and there is the very center of American manhood because the home is where manhood is made. We find that we have been so interested in our haste and speed mania for making money that we forgot to make manhood.

Three hundred thousand little babies die the first year of life, most of them under two months of age. Twenty thousand new mothers die every year from diseases that are easily preventable in this land. One hundred and fifty thousand of those little babies are two months of age and under—two months old and under! Dying because the new mothers do not know how to take care of them.

When the Titanic went down the world stood aghast and said, "Oh, what wonderful bravery!" as men lined up on the deck and said, "Women and children first to the boats of safety," and they let them go. Women and children first on the sea but women and children last on land when it comes to the storms of malnutrition and of disease that beat upon the home and take the baby and the new mother.

It has well been asked in this land, "Suppose men who are making automobiles should get together and fabricate a twelve-cylinder engine that cost \$5,000 and put it on the market and at the end of two months that machine had to be sent to the scrap heap, how long would that concern do business?" Babies come into our land; at the end of two months and often before they are carried out, and there is very little interest manifested in that question unless it happens to come into your home. Herod slaughtering the infants doesn't seem to be in it with some of our social conditions and our infant mortality.

This is a significant thing: The higher the percentage in this land of new mothers who are obliged to go out and work for their daily bread and to support their babies, the higher does the percentage of disease and mortality rise, showing that what society is taking out of motherhood in the production of money she is paying for in the impoverishment of manhood and youth.

If the test of a city is the chance of a child, the test also of a civilization is the care and attention it gives to the homes of its land, demanding that its mothers and babies be not sacrificed in pest holes of malnutrition in social conditions that are sapping our very life.

We hear a great deal about the high cost of living. We hear very little about some of the causes that are producing the high cost of living. We hear a great deal about advising our people to make two blades of grass grow where only one grew before. We hear very

little about advising some of our people about some of the causes underlying this that are tremendous causes of this high cost of living. Crime and insanity are two tremendous causes. We hear very little about the fact that one dollar of prevention will save ten dollars in toll for disease and disease later on. We are paying in this land about \$600,000,000 a year for crime, \$200,000,000 a year for insanity—a tax on every man and woman and child in this country of about \$9.00 for these things, to say nothing of our bad housing, bad sanitation, labor turn-over, tuberculosis and typhoid fever.

When I came here today I was handed a little pamphlet and as I read it I thought what an indictment it was against America that America should allow such a thing. Last year there were 225 lives lost every day through accidental means, 82,000 in one year. Of this number, 22,000 occurred in the industries, 60,000 may be termed public accidents on streets and in homes, and over twenty-five per cent. of these were children under ten years of age, and over four-fifths of all accidents, your own pamphlet tells us, are of a preventable nature. What an indictment against American civilization that we allow such a thing as that today! What an indictment when one dollar of prevention will save this country millions of dollars in the end in crime, disease, crippled men, loss of life and loss of limb.

A large percentage of your accidents are caused by defect of the human machine. Watch the human machine and if you have never in your factories or in your establishments gone back down underneath to the cause, do it now and look to the condition of the machinery and have it thoroughly inspected; have every man in your employ inspected regularly. Get that man's confidence so that he will be glad to have it done. Do it as Marcus Dow has said, because it is a service and service lies at the foundation of our structure everywhere.

### GOOD WORK, ABITIBI !

The most important thing in regard to the Mill in a long time is the report of the accidents from September 1 to 21. There were four accidents of a minor nature in the three weeks.

Now a thing like that does not just happen, says the Broke Hustler. There is a reason for it. And the only reason which can explain it is that from the superintendents to the latest joined man, care was exercised. There are careless men, and they will get hurt. But if the other men and the foremen use their influence for Safety, the effect will make itself felt in time and gather greater effect as time goes on. Safety does not mean Safety First. It means Safety First, Last and All the Time.

And remember that your whole duty is not done when you are careful yourself. That is a fine start, but it is a start only. You must show the other fellow who, generally through lack of knowledge, is taking risks, what the result is likely to be. When every man in the plant is careful for himself and careful for every other man it will be a great place for the workman. No fool-proof machine was ever built, so help educate your neighbor at the next machine, or bench or whatever it is, not to play the fool.



## Six Months' Export Exceed those of Previous Year

Canadian pulp and paper exports for the first six months of the fiscal year, ending September 30th, were valued at \$87,243,476, as compared with \$43,745,972 for the corresponding period in 1919, a gain of \$43,497,504, or approximately 100 per cent. They exceeded by \$3,380,910 the total value of all such exports for the entire fiscal year ending March 31st last and were practically fourteen and one-half times

the value of all similar exports during the same period of 1918. They were made up as follows:

Paper and mfgs. of	\$43,025,764
Sulphate (kraft)	6,887,557
Sulphite, bleached	7,889,214
Sulphite, unbleached	18,802,783
Mechanical	10,638,158

\$87,243,476

The paper exports included 33,636 cwt. of book paper, valued at \$356,788; 7,537,441 cwt. of newsprint, valued at \$35,760,333, and miscellaneous paper to the value of \$6,908,643.

### EXPORTS OF PAPER, WOOD PULP, AND PULP WOOD.

Exports of Canadian Produce—Months of September, 1919 and 1920 and six months ending September 1918, 1919 and 1920.

Paper Printing Paper :	Cwt.	Month of September		Six months ending September		
		1919	1920	1918	1919	1920
Book paper		4,100	3,291		27,802	33,636
	\$	32,879	32,609		259,053	356,788
Newsprint paper		1,079,599	1,212,225		6,505,166	7,537,441
	\$	3,842,641	6,542,179		23,019,380	35,760,333
Printing paper				1,033,529		
	\$			3,001,194		
Other paper		712,059	1,280,705	488,134	3,840,813	6,908,643
	\$					
Total paper	\$	4,587,579	7,855,493	3,489,328	27,119,246	43,025,764
<b>Wood pulp :</b>						
Sulphate (Kraft)		243,991	274,190		1,171,524	1,119,151
	\$	836,089	1,398,092		3,858,267	6,887,557
Sulphite, bleached		87,339	222,306		499,342	1,046,504
	\$	453,096	1,999,016		2,451,251	7,889,214
Sulphite, unbleached		524,769	513,526		2,047,708	3,273,363
	\$	1,942,391	3,361,048		7,698,870	18,802,783
Chemically prepared				714,673		
	\$			2,584,097		
Mechanically prepared		415,046	424,689	279,512	2,148,877	3,449,300
	\$	511,402	1,877,053	337,565	2,618,338	10,638,158
Total Wood Pulp	Cwt.	1,271,145	1,434,711	994,185	5,867,151	9,188,318
	\$	3,742,978	8,635,209	2,921,662	16,626,726	44,217,712
Pulp wood	Cord	89,470	151,541	128,646	515,444	653,856
	\$	884,575	2,046,868	1,217,635	5,089,693	7,803,332
<b>Country of Destination.</b>						
<b>Paper and Manufactures of :</b>						
To United Kingdom	\$	361,087	399,313	49,235	1,848,130	2,403,079
United States	\$	3,913,721	6,228,615	2,932,601	21,917,486	33,899,788
Other Countries	\$	312,771	1,236,565	507,492	3,353,630	6,722,897
<b>Wood Pulp :</b>						
To United Kingdom	\$	193,771	1,023,924		1,280,242	5,610,648
United States	\$	3,153,038	7,228,818	2,635,474	13,251,069	35,834,034
Other Countries	\$	396,119	382,467	286,188	2,095,415	2,773,030
<b>Pulp Wood :</b>						
To United Kingdom	\$					
United States	\$	884,575	2,046,868	1,217,635	5,089,693	7,803,332
Other Countries	\$					
<b>Total Paper, Pulp Wood and Pulp :</b>						
To United Kingdom	\$	554,858	1,414,237	49,235	3,128,372	8,013,727
United States	\$	7,951,384	15,504,301	6,785,710	40,258,248	77,537,154
Other Countries	\$	708,890	1,619,032	793,680	5,449,045	9,495,927
Totals	\$	9,215,132	18,537,570	7,628,256	48,835,665	95,046,808

Exports of pulp and paper for the month of September were valued at \$16,490,702, compared with \$8,330,557 in September, 1919, an increase of \$8,160,145.

Paper exports included 3,291 cwts. of book paper, valued at \$32,609; 1,212,225 cwts. of newsprint; valued at \$6,542,179 and miscellaneous paper valued at \$1,280,705.

Exports of woodpulp of all grades for the month again show large increases over last year. Exports of sulphate (kraft) amounted to 274,190 cwts., valued at \$1,398,092, as compared with 243,991 cwts., valued at \$836,089 last year; sulphite; bleached, 222,306 cwts., valued at \$1,999,016, compared with 87,339 cwts., valued at \$453,096; sulphite, unbleached, 513,526 cwts., valued at \$3,361,048, compared with 524,769 cwts., valued at \$1,942,391; mechanical, 424,689 cwts., valued at \$1,877,053, compared with 415,046 cwts., valued at \$511,402.

Exports of unmanufactured pulpwood for September amounted to 151,541, cords, valued at \$2,046,868, compared with 89,470 cords, valued at \$884,575 in September, 1919, and for the six months' period, 653,856 cords valued at \$7,803,332, compared with 515,444, valued at \$5,089,693 the year previous. All of the pulpwood exported went to the United States.

The accompanying table gives a summary of the situation.

**U. S. NEWSPRINT NEWS.**

The imports and exports of printing paper not dutiable (practically all newsprint) and of wood pulp for the month of August 1920 compared with the month of August 1919 were as follows:

	August 1920 Net tons.	August 1919 Net tons.
Imports of Newsprint (total) . . . . .	73,513	47,131
From Canada . . . . .	71,222	47,125
From Norway . . . . .	78	0
From Sweden . . . . .	2,213	0
Export of Newsprint (total) . . . . .	4,426	9,599
To Argentina . . . . .	1,751	3,781
To Cuba . . . . .	1,145	1,061
To China . . . . .	312	512
To Italy . . . . .	164	65
To other countries . . . . .	1,054	4,180
Imports of ground wood pulp (total) . . . . .	32,805	23,116
Imports of Chemical Wood		
Pulp (total) . . . . .	77,709	34,038
Bleached Sulphite . . . . .	13,453	3,800
Bleached Sulphite . . . . .	39,789	19,501
Unbleached Sulphate . . . . .	20,404	10,339
Bleached Sulphate . . . . .	1,063	398
Exports of Domestic Wood		
Pulp . . . . .	1,643	3,573

The imports of newsprint for August 1920 were 26,382 tons more than for August 1919. The exports for August 1920 were 5,186 tons less than for August 1919.

The tonnage to "Other Countries" under the "exports of Newsprint" for August 1920 includes 162 tons to Peru, 112 tons to Brazil, 96 tons to Uruguay, 91 tons to Philippine Island, 84 tons to Australia, 82 tons to Columbia and 68 tons to Chile.

The imports of mechanically ground wood pulp for August 1920 were 9,689 tons more than for August 1919. The exports of domestic wood pulp were 1,930 tons less than for August 1919.

The imports of chemical wood pulp (total) for August 1920 were 43,671 tons greater than for August 1919.

Publishers' stock increased 14,871 tons during the month. The average daily tonnage used during September was 469 tons more than the average used in August.

Publishers' stocks and transit tonnage on September 30 represented slightly more than 49 days supply at the existing rate of consumption.

Seventy publishing concerns held about 49 per cent of the tonnage on hand at the end of the month.

The domestic consumption of standard news by metropolitan dailies using between one-half and three-fourths of a million tons annually decreased more than 1 per cent for September, 1920, compared with September, 1919, and increased more than 31 per cent for September, 1920, over September, 1918.

**Average Prices Paid by Publishers**

The weighted average price of contract deliveries from domestic mills to publishers during September, 1920, f.o.b. mill in carload lots for standard news in rolls, was \$5.531 per 100 pounds. This weighted average is based upon September deliveries of about 43,000 tons on contracts involving a total tonnage of approximately 340,000 tons of undelivered paper manufactured in the United States.

The weighted average contract price based on deliveries from Canada mills of about 25,000 tons of standard roll news in carload lots, f.o.b. mill in September, 1920, was \$5.308 per 100 pounds. This weighted average is based upon the September deliveries on contracts involving about 140,000 tons of undelivered Canadian paper. The greater number of these are short-term contracts expiring before 1921.

The weighted average market price for September of standard roll news in carload lots f.o.b. mill based upon domestic purchases totaling more than 5,000 tons was \$9,800 per 100 pounds. This weighted average may be less than market quotations on account of contract relations, quantity discounts, mill stock ownership and other causes unknown to the Commission.

Weighted average, contract and open-market prices of standard roll news per 100 pounds f.o.b. mill, purchased by American newspapers from United States and Canadian mills during the third quarter of 1920:

Month.	Contract.		Open Market
	United States	Canada.	United States and Canada.
July . . . . .	\$5.211	\$4.938	\$10.498
August . . . . .	5.371	5.306	10.212
September . . . . .	5.531	5.308	9.800

**SAFETY LIMERICKS.**

There once was an onery guy,  
Who oft made the safety man say,  
As he worked he would swear  
That no goggles he'd wear,  
Now he's wearing a patch on his eye.

Another nut fooled with the juice  
In a high voltage line that was luice,  
He always was sciffin'  
Now he's lining a coffin,  
If they must die to learn, what's the uice!

Business is the hand that feeds us all. Let us strengthen it, not weaken it.

## Press Comment on a Government Paper Mill

A proposal, already twice referred to by the Pulp and Paper Magazine, is the scheme suggested for the operation of a pulp and paper mill by the Ontario Government. Press comment on the idea is somewhat varied. We find a number of papers in Ontario supporting the idea in various terms. A friend of ours says: "Let them build it, and there will be a perpetual precedent for high prices."

This is what the Sudbury, Ont., "Mining News," says:

Should the Provincial Government carry out its plan of operating a pulp and paper mill in the Nipigon district the experiment would be interesting in more ways than one. The timber probe has revealed that there is an astonishing lack of reliable information as to just how much money the province is entitled from the sale of timber and pulp-wood concessions and if the province ran a pulp mill of its own that information could be secured first-hand.

It is to be hoped that the scheme goes through as the North would be benefited to a considerable extent and in the event of success in the enterprise other industries would undoubtedly be encouraged to locate in Northern Ontario. All of which would undoubtedly result in further development of the forest, mineral and natural resources. One cannot predict with any degree of assurance that the venture would result in immediate profit as governments usually have a way of muddling up otherwise promising schemes in ways which a private concern could not dream of but from past records it would seem that the paper industry is one which is at best far from overcrowded and one which pays exceedingly good dividends for the money invested. Should government competition in this line assume serious proportions we could confidently look for a general decrease in the price of paper and that at least would have the unqualified endorsement of printers and publishers.

The Hamilton, Ont., "Herald" also supports the idea, thus:

For more reasons than one the establishment of a pulp-manufacturing plant in the Nipigon district, to be owned and operated by the provincial government, would be a promising adventure in the field of public ownership. It would afford a market for much Hydro power developed in that district, power which otherwise might go to waste. It would (especially if paper as well as pulp were manufactured) provide a standard of costs which would enable the public to know about what is the cost of paper-making in this country. Comparisons between the cost and the selling prices would be instructive and perhaps profitable. As for the product, there would be no difficulty in disposing of it at a profit. The demand for wood pulp and paper will for a long time to come be much greater than the supply, and so long as that condition lasts manufacturing will be profitable.

It is to be hoped that the government's plan will include a paper mill as well as a pulp mill. It would be easy to dispose of the whole product of that mill to Ontario publishers at a price sufficient to make the industry profitable to the public.

From the remarks of the Belleville "Intelligencer" it looks as if that newspaper considers it the duty of the

Government to undertake a very costly and special line of activity in order to supply the press with cheap paper. Our contemporary says:

Practical government seems to be gaining ground. The Ontario Legislature went into the fish business with very satisfactory results and now there is a possibility of the same government undertaking to establish and operate a paper mill. According to the Toronto Mail and Empire a plan for operating a pulp and paper mill as a provincial enterprise has been receiving the serious consideration of the Ontario Cabinet for the past three months. The establishment of such a plant as a publicly-owned and operated concern is stated to be by no means improbable. According to the plan under consideration, the mill would be established in the Nipigon district at some point to which power could be transmitted from the new Hydro-Electric power development plant at Nipigon Falls.

While neither the details of the plan nor the general policy has yet been decided upon, it would occasion no surprise in Government circles if a favorable conclusion was reached. The plan is unique in that it would be the first time an Ontario Government had ever undertaken the utilization of the province's pulp resources for the production of paper as a publicly-owned enterprise. If decided upon it is probable that the large timber in the district chosen will be set aside for the project.

The Nipigon Hydro-Electric plant will have a surplus of power available for some years. A Government-owned pulp mill, supporters of the idea argue, would furnish a good customer and the basis for a mutually satisfactory contract for power. Another important feature from the Government's standpoint is the results obtained in a plant of this nature would provide the means of ascertaining with far more definiteness than is now the case, what remuneration the province is entitled to in return for timber and pulp-wood concessions granted to private enterprises.

The paper output of the government mill if it is established should be reserved for Canadian newspapers and sold at a fair price, thus relieving a situation which is forcing newspapers out of business and resulting in steadily increasing rates of subscription and advertising to keep alive the papers which survive.

According to the following, the Toronto "Globe" thinks a public saw mill should come first:

The suggestion is made by The Toronto World that the people of Ontario would like to see "a pulp mill worked out as a public-owned proposition." There should be no difficulty about that. For several years the Hydro-electric Commission has been operating such a mill in the Trent Valley watershed near Campbellford. Although the existing contract price for the pulp ground in the mill is considerably below the rate that is now current on new contracts, the Bruton mill is making what pulp magnates speak of as "a quite satisfactory profit."

The people of Ontario own the mill, because it was taken over as part of the property of the syndicate which developed the Trent Hydro-electric system and which sold out to the Ontario Government at a price that was regarded as fairly steep. For a time it was feared that the pulp mill would be a liability rather than an asset. This idea was fostered by shrewd business men who wanted to buy the property cheaply and

participate in the pulp and paper boom. They offered somewhat over half a million dollars for it as a going concern. At the present time, and for some months past, the mill has been earning profits at a rate that in a little more than a year will put to the credit of the Trent branch of the Hydro system fully as much as the Province would have obtained from the sale of the property.

It would do no harm, and might do a lot of good, were Mr. Drury to publish the facts as to the profits accruing to the Central Ontario light and power service from the operation of the Bruton mill. The Hydro-electric Commission is doubtless profiteering like everybody else in the pulp industry. A profit of a hundred per cent. a year cannot be defended, even when it goes toward the reduction of the cost of light and power to the people who obtain electric energy from the Central Ontario section of the Hydro-electric system. But Sir Adam Beck and his colleagues would be false to their trust were they to sell the pulp produced by the people's mill at prices less than the going quotation. The volume produced is not sufficient to break the market, and the paper produced from Bruton pulp would not cost the consumer any less than it does at present were the Commission to lower pulp prices. The extra earnings would be "absorbed" by the paper manufacturers into whose hands the pulp finds its way.

If there is any moral at all to this tale of the public ownership of a pulp mill it is that the Province cannot regulate or influence the price of products to the ultimate consumer by carrying on a single process of manufacture, and that not the finishing one of a series. It may be that the people of Ontario as consumers of paper will yet have to combat paper profiteers as they fought the exploiters of electric energy by building public service plants. There are not a few things, however, fully as urgent if public ownership and operation are to be brought into general use as a remedy for industrial monopolies. The sawing of timber from the Crown lands as a means of providing cheap lumber and ending the house famine looks like a more immediate need even than the enlargement of the venture in pulp production, which has merely proved what everybody already knew—that the real gold mines of Ontario today are its pulp and paper mills.

But from the community that would benefit most by another paper mill comes the warning that all is not good that's government. The Port Arthur "News-Chronicle" remarks:

#### Somebody Please Put Them Wise.

We cannot help wondering if the Drury Government is serious in its idea of entering into the manufacture of pulp and paper or either one of those commodities. If they are somebody ought to take the whole cabinet to one side and give them a good fatherly talk about going into a business of which not one of them knows a single thing, and in which no expert will stay with any government which has in view the objects stated to be back of the proposal.

Manufacture of pulp and paper is among the lines of business that require exceptionally skilled men and those men are in such demand today that they can receive better remuneration for their services than any government will pay them.

It has been said that one of the objects would be to demonstrate what the government should receive for the raw wood. The value of wood is being ascertained daily by the government through the bids it is receiving for lots that it puts up for sale. The Government can

rest assured that the companies now engaged in the business of making pulp and paper will keep it fully advised of values, to the cost of the newspapers first and the ultimate consumer in the end.

It is stated that the project is put forward also for the purpose of finding what newsprint should be sold for to give fair returns on the money invested. By the time the Government has expended \$10,000,000 or \$15,000,000 in building and equipping say a four hundred ton mill, or \$5,000,000 for a hundred ton mill, we are of the opinion that it will make up its mind that more than wind is required for construction, operation and revenues.

Another reason given for the erection of a mill is that it will give to the public the full value for the material used. A person with a sore lip should not think of this, for the very thought makes one laugh.

And then comes the Financial Post, with the following:

Newspapers and politicians desirous of capitalizing to their own advantage the popularity of public ownership with the masses are urging the governments to go into all kinds of business. Ventures in paper manufacturing are being urged upon Premier Drury. Publishers like J. Atkinson, of the Toronto "Star," who have no opportunity of studying the practical features of such enterprises, are very willing to let the Government experiment with anything if it will please their readers—no matter what the cost to the province as a whole may be. This is particularly the case in view of the benefits which might accrue to the publisher of a powerful political newspaper in his relations with a government paper mill.

But while publishers who know nothing of the paper business are suggesting Government manufacture, we find the Fort William "Times-Journal," published right on the ground of the pulp industry, emphatically opposing anything of the kind and standing firmly for the encouragement of private enterprise:

Our experience of government and public ownership and operation has not been so brilliant as to encourage us in widening its scope so as to include industries that have always been regarded as essentially undertakings that should be operated by private enterprise.

There is apparently no lack of private capital to-day seeking for investment in the pulp and paper business, and it would only be the stress of a demand, which private capital refused to supply, that would justify the Government in pledging the credit of the province to build pulp, paper and saw mills.

Even granting that the Hydro Commission can make a success of supplying power, which it has assumed as a Government monopoly, it was demonstrated that it could not go out of that field into general industry successfully, when the Hydro undertook to operate the farms, which it had acquired along the line of the Chippawa development, and lost about \$30,000 in the attempt.

No one would deny the Government the right to dictate the terms and conditions under which its timber shall be utilized, and there will be no difficulty in securing capital to do the work, if the terms and conditions are made as little onerous as the Government would make them for itself were it determined to build and operate mills of its own.

A miss is as good as a mile, but remember that you are not always missed, says the Safety League.

# The Belching Smoke-Stack

By T. K. D.

(An unusual advertisement for Winans, Dickinson and Whitehead, Ltd., which appeared in a daily paper).

It may be within the scope of the practical economist to take cognizance of the problem of perpetuating such national resources as Providence has given this country in the form and outline of our great timber areas.

Of Conservation of Forests we have heard much, learned little, and cared less.

But as a consequence of the very considerable monetary interest recently allocated to the development of our forest resources, we must, as investors in this rapidly growing industry, hear more, learn more, and care more. We have capitalized the industry to the extent of several hundred million dollars, and having assumed this huge financial stake in the comparatively new business of paper production, we want to know what conservation means when translated into the language of Capital Investment.

When we garner an acre of wheat, we dispose of the wheat and retain the acre. When we burn a ton of coal we deplete a valuable national asset to the extent of one ton of coal. That ton of coal boils down to productive heat-units, and goes up in smoke. When we cut a cord of wood—what happens?

Until posterity (and our own immediate interest) have in sight, we cut and slashed each cord of wood and passed on to the next. The lumberman started the game in haste and there was little leisure in the operations of paper-makers who came in later. Depletion was so rapid that by 1908 it was found imperative to exercise more care in the cultivation of new woods and the protection of those woods yet uncut.

Scientific methods have been adopted for re-forestation and fire protection, and much good has been accomplished in the past ten years. The Quebec Legislature has given material help in some directions, while allowing destructive influences to prevail in others.

The business, the very serious business, of Forest Conservation is, however, still in its infancy, and it is necessary, on behalf of the heavy capital investment, as well as from the national standpoint, that practical rather than theoretical plans for Conservation be adopted as a definite policy for the guidance of lumbering and paper-making operations.

## The Two Alternatives.

"A Tree for a Tree,"—"A Life for a Life"—is the slogan of some of the professionals. These gentlemen would "seed" on neutral ground a compensating tree for the tree led to the slaughter. They would start a new forest, all their own, on adjoining ground not necessarily designed by Providence for timber bearing. It takes 30 seconds by the clock to bring a tree to earth, and 40 to 50 to 100 years to bring its offspring to maturity. For every denuded acre another acre, by this plan, would be pressed into service on hill and dale, both far and near.

As can readily be imagined it costs money to "seed," and as each seed bursts into infant plant, into youthful tree, and by stages to maturity, the tied-up capital cost per tree compounds at a fearful rate over a period of 40, 50 or 100 years. Obviously, this makes the "Tree for Tree" expediency an affair of infinite cost, infinite labour and infinite risk of destruction by the scourge of fire so prevalent in this country.

Other professionals urge, as the best method of Con-

servation, a system of selection of cut, plus elaborate fire protection, plus aid to nature's own service in the practice of re-forestation. For many reasons the advocates of this latter course have the more practical, the more sensible solution of the problem of Conservation.

An article which appeared in the "Canada Lumberman and Woodworker," in February last, entitled "Wantonly Wasting Many Growing Forests," was most instructive and well worth the consideration of all who are interested in the conservation of our forests.

In respect to European methods of Forestry, it is interesting to note that the Premier of Quebec, immediately upon taking office, declared his intention of sending some members of the Provincial Forestry Department to Scandinavia to study forestry as practised in that country.

It may be opportune to mention that, realizing the importance of the forest to their industry, the Wayagamaek Pulp & Paper Company, Limited, some five years ago sent a McGill Science Graduate to Scandinavia to pursue a course of practical work under some of the leading Foresters in Scandinavia, finishing with a course at the Royal School of Forestry at Stockholm. This student had the good fortune to spend many months in the forests of Baron Mannerheim of the Kraufors Company, where conditions are very similar to some of the extensive Canadian plants. Baron Mannerheim, by the way, is well known to pulp and paper makers in Canada, and recently was a visitor to this country. This educational work brought out the fact that, while a certain amount of re-forestation by planting is practicable, and is carried out in certain especially adapted parts of Europe, it had on the whole been abandoned in favour of the adoption of good, practical and scientific methods of wood cutting, draining, thinning out and helping natural seeding of the forest.

Nature is a Great Healer. It is estimated that in the course of the past 200 years fully 80% of the timber resources of the forest areas of Canada has been destroyed by fire—and Canada today is the White Man's Hope for uninterrupted delivery of the daily newspaper, with one billion cords of coniferous pulp-wood species standing erect awaiting the call of the pulp consumers.

Fire protection in deed and not in need; a comprehensive aid-to-nature plan to enable the trees to propagate their species, in addition to seed planting on parts of cut-over lands, offer the only solution that is practicable, economical and certain of definite and profitable results.

## The Root of The Evil.

Destruction by Fire is the root of the evil of forest depletion. Fire will wipe out in one short week more fine timber than the whole producing machinery of the Dominion could cut down in the course of a ten-year period. That being a fact, is it not the imperative and immediate duty of the Provincial Governments to take every conceivable precaution? Much advancement has, no doubt, been made in fire protection, but curiously enough the Federal Government's own steam locomotives and the Provincial Government-urged colonists are the greatest source of danger to our forest areas. Locomotives are allowed to belch live coal into inflammable material in the Northern parts of Quebec and Ontario, and the would-be-farm-settlers buy the best of timber lands, at 50c per acre, cut the

timber, sell and ship it to United States mills, and jump the claim. In the process of masquerading as a potential farmer, this gentleman only too often cleans up the debris from his lumbering operations by means of more or less regulated bonfires.

Thus we have the two chief Causes of forest destruction located, but not cornered, as the Effect has still a wide range of freedom for dangerous work.

If there is danger from live coal, let us get rid of live coal. Electricity in this province is cheap enough, in all conscience. The capital expenditure for electric or for oil-burning locomotives would be saved in one twelve month period. Electric storage locomotives with the necessary generating stations as used by the New York Central, surely could be installed on those parts of the railway system which run through the richest of our forest areas.

Let us put the lid on the hatching smoke-stack, and if timber areas are the only lands in this province available for the so-called colonist, the colonist should be urged to go elsewhere to farm, without the preliminary back-aching process of stump extraction.

### LET THE BUYER BEWARE.

There is a growing and urgent need for extreme care and caution on the part of buyers of the securities of new pulp and paper enterprises in Canada, says the October Bulletin of Royal Securities Corporation.

The brilliant records of earnings shown by many of the old-established and well-managed pulp and paper companies are, as might well have been expected, including an increasing number of new promotions. The promoters of some of these companies, lacking both a proper appreciation of the essentials of a sound pulp and paper enterprise and a proper sense of their responsibility to investors, are offering for public participation the Bonds and Stocks of corporations possessing few, if any, of the elements requisite to sustained success. As an inducement to part with their money investors are reminded of the large profits realized by early buyers of the securities of some of the now highly successful Canadian pulp and paper companies; but little, or nothing, is said about the factors which, in not a few cases, are conspicuously lacking in these new promotions.

At the risk of wearying our readers with repetition, we would once more point out with all possible emphasis that there are four major essentials which must characterize pulp and paper enterprises, if capital invested in them is to be properly safeguarded.

The first is an adequate and accessible pulpwood supply. The second is the combination in close proximity with it of an easily developed water power of a sufficient capacity to operate the mill construction necessary for the conversion of the wood. It is well for the investor to remember that timber areas which are possessed of this combination and which at the same time have easy access to the markets for their products are becoming extremely scarce and of correspondingly high value. In the third place, there must be constructed efficient mills with up-to-date equipment, involving in most cases the eventual investment of many millions of dollars. The fourth, and not the least, essential is the technical staff of experts necessary for the efficient prosecution of the numerous and highly scientific processes involved in pulp and paper production. To be successful, the manufacturing organization in its entirety must be operated by a competent

staff of experts, which can develop efficiency only through years of experience. The organization of such a staff for an entirely new company is about as difficult as the securing of a wood supply sufficient both in quality and quantity.

The first thing, therefore, that the investor should ask himself is whether the estimated wood holdings are sufficient to carry on the business throughout the lifetime of the mill and whether the estimate is backed by the authority of a skilled and practical expert. The next is whether the proposed enterprise controls a water power by which wood can be converted into pulp and paper at low cost. The third is whether it either possesses an up-to-date mill or will have sufficient capital for its erection. And, lastly, the investor will do well to scrutinize very carefully the record of those responsible for the technical operations to be carried on with his money. If they are obviously successful men of high professional and business standing, he may reasonably not only relieve his mind as to the conduct of the business but also as to the basic soundness of its conception; for such men will not to-day associate themselves with enterprises which they see foredoomed to eventual failure by reason of the lack of any of the factors fundamentally necessary to success.

It is only indeed in very exceptional circumstances that enterprise of any kind involving entirely new construction without the backing of already established earning-power should be undertaken at all in this period of high cost of labor, materials and capital. If it is proposed to finance new construction in the Canadian pulp and paper industry, without linking it up to present earning power capable of absorbing high construction cost and interest charges, to be successful that enterprise must possess an entirely capable organization and have available most exceptionally cheap and accessible pulpwood and water power.

The only construction which, in our judgment, is thoroughly justifiable under present conditions is that undertaken to extend the scope and prove the efficiency of an already existing and successful manufacturing organization. Such a concern is almost certain to be able to finance and to build more cheaply than an entirely new enterprise, added to which, the weight of present high costs of men and construction is spread over a large volume of business, much of it carried on with plants and capital obtained at much lower price-levels than those now prevailing.

Investors should examine most carefully offerings of securities of new industrial enterprises of any description, especially those which involve not only the construction of plants but the building up of operating organizations. Essential at all times, this scrutiny is most necessary under existing economic conditions and will remain so until construction costs and interest rates have reached more normal levels.

### WILL CARRY ON PULPWOOD OPERATIONS.

The Hawk Lake Lumber Co., Limited, with headquarters at Monteith, Ont., of which A. E. Wieks is president, has purchased the rossing mill and sawmill of the Monteith Pulp and Timber Co. at Monteith, on the Driftwood River in Northern Ontario.

The Hawk Lake Lumber Co., Limited, has obtained a charter and the name replaces the former one of the Driftwood Lumber Co., Limited. It is understood that the Hawk Lake Lumber Co. will carry on extensive pulpwood operations in and around Monteith.

## Optimism Among Box Makers

Respecting Canadian conditions, I am in more close touch with the Toronto market than with the other parts of Canada, but Toronto being the largest paper box manufacturing centre in this country, it is probably a good criterion as to general conditions.

Present shipments continue good in volume, but there is a marked decrease in respect to new orders, this tendency having been noticed within the past month or six weeks.

On the other hand, costs not having been reduced, the price of board in fact having been increased 10 per cent September 1st last, generally speaking, the present range of prices on paper boxes is being upheld, and the paper box manufacturers with whom I am in touch, take the philosophic view that if there is only so much business to go around, they can only expect their share of what is going, and that to attempt to increase such share, by reducing prices where costs do not justify a reduction, would only check business instead of stimulating it.

Viewing world conditions generally, all indications point in the direction of the peak of high prices having been passed. Involved in the present world movement of prices is a curtailment in the purchase of luxuries.

This is a healthy sign, as while it results in unemployment in the luxury trade, which reacts on business generally, it is a blessing in disguise, as this had to happen sooner or later in order ultimately to swing over the trades making essential goods, large numbers of work people who have been producing luxuries, thus at the same time stabilizing the labor market and helping to restore normal conditions.

The situation can be viewed with equanimity, as it only means that manufacturers and merchants will have to adjust themselves to the new conditions by striving for increased efficiency in manufacturing, sales and collections, the standard of efficiency having deteriorated during the extraordinary war time conditions.

An optimistic view is the only one that is justifiable. Yet at the same time calmness and good judgment are at present required in a marked degree. Caution, to a certain extent, is also necessary. A due sense of proportion needs to be maintained though, and caution not be allowed to degenerate to a point where instead of its being caution, it is really indecision and unnecessary fear. Nor should the manufacturer or merchant who now actually requires goods stay out of the market on the expectation that prices will decline. Such an attitude is against the true principles of buying and is simply gambling on the market. He, at the same time, runs the risk of letting his stock be reduced to a dangerously low point, too low for safety. Such an attitude also tends to make trade conditions worse, whereas everybody should be doing all he can to improve them.

If one now needs goods, it is his business to buy them, and let the market take care of itself. "Sufficient unto the day is the evil thereof." On a declining market, the buyer cannot always expect to hit the low point, and at the same time keep his stock up to the proper size. If he should happen to hit a high spot in the market, he must remember that that will have to be

averaged against the many times in the past few years that he has had the advantage of a rising market.

The manufacturer and merchant who expects to stay permanently in business, and who—influenced by what others are doing—carries out the above principles in both buying and selling, cannot go very far astray, and the length of time required for the restoration of normal business conditions will be determined to a very great extent by the degree to which such principles are carried out by the business world.

In conclusion, anyone viewing the situation in the proper perspective, cannot, notwithstanding any temporary slackening, take any other than a cheerful view of prospects for trade in the future in countries possessing such vast resources as do Canada and the United States.

### SAFETY FIRST IN ENGLAND.

A safety first convention was held in London the other day and I heard some of the schemes adopted in Canada and U. S. A. enulogised by Government Inspectors. As five indispensable points of a safety first organization, Mr. Gerald Bellhouse, Deputy Chief Inspector of Mills, suggested that :

- (1) The employer must put safety on the map and give it a dignified and recognised place.
- (2) There must be one man authorised to supervise all safety work in a factory with duties of inspection and education.
- (3) The co-operation of the Foremen.
- (4) The establishment of a safety committee of representatives of the management of a mill and the workers, who would inquire into all accidents, and publish accounts of their inquiries and
- (5) Bulletin boards for the exhibition of pictures and stories driving home what the workman can do to protect himself in a mill or factory.

Dr. John C. Bridge read a paper on First Aid in the Mill. He thought the reduction of fatigue by shortened hours of labour and rest pauses during spells of work would produce a diminution in the number of accidents. I heard another speaker state that there was a distinct connection between the personal health of the worker and his liability to lapses leading to accident. No mechanical devices could prevent the majority of accidents, which were due to insufficient alertness. Workers should be trained in hygiene, and precautionary measures might be taken to guard, for instance, against outbreaks of influenza in a mill during the winter. The convention was a great success and large millowners attended it.—J. B.

### NOVEL ON PULP INDUSTRY.

Clay Perry, of Pittsfield, Mass., formerly of Oconto Falls and Appleton, Wis., is the author of a novel "Heart of Hemlock" which deals exclusively with the wood-pulp industry, of which Wisconsin is a centre. The book is one of the first, if not the only novel devoted entirely to this important industry and is of peculiar interest to those who are engaged in forest industries. Mr. Perry's inspiration for the book, which has just been issued by Bobbs-Merrill Publishing Co., Indianapolis, came through the reading of a report of a meeting of the Eastern Forest Products Association at Bangor, Me., in October, 1919, during which an address was made of which the general topic was "Paper, the Foundation of Democracy." In his book Mr. Perry deals with the problems and interest of the wood-pulp and paper manufacturing industry and, in a colorful story of business, love and adventure, suggests a solution of some of them.

**BRITISH TECHNICAL SECTION MET.**

The first general conference of the Technical Section of the Paper Makers' Association of Great Britain and Ireland, was held in Manchester on Friday, 8th October, 1920, when papers on the following subjects were submitted for discussion:—

Technical Education in Paper Making.—Maj. J. Erdington Aitken.

The Testing of Wood Pulps.—G. H. Gemmel, Esq., B.Sc.

Machine Strainers.—A. MacIvor, Esq., M.I.M.E.

The Economic Utilisation of Heat & Power in Paper Mills.—William Adamson, Esq.

Major Aitken's paper appeared in the Oct. 21st issue of the Pulp and Paper Magazine; Mr. Adamson's will be printed in an early number.

**First List of Members.**

Abel, J. G., Alex. Pirie & Sons; Adamson, W., C. Walmsley & Co.; Aitken, W. E., P. Dixon & Son; Allan, J. S., Piries Photographic; Arnot, J. M., J. Wrigley & Sons.; Allen, Wilfrid, East Lanes. Paper Mill; Baker, A., Empire Paper Mills; Baldwin, J. W., Smith, Stone & Knight; Ballantyne, J., Donside Paper Co.; Bates, M., Northfleet Paper Mills, Blaek, J., Donside Paper Co.; Blades, A. D., R. Fletcher & Son; Bolton, N., Sun Paper Mill Co.; Bolton T., Sun Paper Mill Co.; Bone, A., John Dickinson & Co., Boyle, A., Smith, Stone & Knight; Bowkes, J. F., Smith, Stone & Knight; Brennan, J., Hugh Stevenson & Sons; Baldwin, G. D., Baldwin & Sons; Calthness, G. J., Chas. Marsden & Sons; Cardis, E., Wall Paper Mfrs.; Cartman, J., Wall Paper Mfrs.; Clapperton, R. H., Donside Paper Co.; Cuneane, T. H., A. M. Peebles & Son; Cuss, W. A.; Crankshaw, C. T., Team Valley Paper Mill; Cotter, R., Arthur & Hinshaw; Collins, J., Stoneywood Paper Mill; Davidson, P. W., Fourstones Paper Mill; Dawe, A., H. M. Stationery Office; Dawe, E. A., H. M. Stationery Office; Densot, P. G., Edward Lloyd; Dixon, O., Peter Dixon & Sons; Dixon, W. H., Peter Dixon & Sons; Dobson, M. O., C. Marsden & Sons; Donside Paper Co., Aberdeen; Downey, P., Irish Paper Mills; Davidson, T., Davidson & Sons; Davidson, W. D., Davidson & Sons; Eccles, J. E., Empire Paper Mills; Emerick, G., Charles Marsden & Sons; Empire Paper Mills, Greenhithe; Evans, J. H., Wall Paper Mfrs.; Fletcher, R., & Son, Kearsley Paper Mill; Forsyth, R. S., Smith, Stone & Knight; Fraser, W. G., Masson, Scott & Co.; Gemmell, G. H., Gemmell & Thin; Gent, G. H., Smith, Stone & Knight; Goldney, P. T., Donside Paper Co.; Govan, R., Golden Valley Mills; Greenhalgh, P. H., Wall Paper Mfrs.; Gregory, C., Cooke & Nuttall; Groundwater, A. G., A. Pirie & Sons; Guild, E. J., W. & R. Balston; Gray, J. N., C. Davidson & Sons; Hadfield, T., Consulting Chemist; Hargreaves, J., Wall Paper Mfrs.; Hart, H. W., Wall Paper Mfrs.; Harvey, R. M., Isaac Warwick & Co.; Hoyle, W., Smith, Stone & Knight; Heckford, F. J. T., J. Dickinson & Co.; Henson, F. H., William Nash; Haigh, F., Britains; Hill, Craig & Co., Balerno Bank Mills; Hodges, M. B., Wall Paper Mfrs.; Holaday, Lewis, Wiggins, Teape & Co.; Holroyd, G. W. F., Tech. School, Blackburn; Holt, H., Engineer.; Horne, A., Donside Paper Co.; Inveresk Paper Co., Inveresk; Irish Paper Mills Co., Clondalkin; Jackson, T. E., Smith, Stone & Knight; Jacques, R., Ford Paper Works; Jardine, J. L., James Brown & Co.; Jardine, E. M. R., James Brown & Co.; Jennison, J., Empire Paper Mills; Jennison, R., John Craig & Son; Kirkman, W., East Lanes. Paper Mill; Ketchen, T., C. Davidson & Sons; Leicester, A. E., Engineers, MacIvor,

A., Wall Paper Mfrs.; MacIvor, D. T., Empire Paper Mills; MacIvor, S. A., Wall Paper Mfrs., Marx, R. J., Engineers; Makin, H. R., Golden Valley Mills; Mazy, C., F. Newby & Co.; Morgan, B. L., Thomas & Green; Mottershead, P., Grove Mill Paper Co.; Mowat, J. H., Peter Dixon & Son; Newcombe, G., Daily Telegraph Mills; Nuttall, T. D., Bentley & Jackson; Onion, G., Irish Paper Mills; Owen, T. & Co., Ely Paper Works; Ogden, A., East Lanes. Paper Mill; Page, H., Smith, Stone & Knight; Pirie, A. W., Pirie & Sons; Pollock, J., Donside Paper Co.; Porritt, W., Grove Mill Paper Co.; Potts, T. T., R. Fletcher & Son; Prestwick, J., East Lanes. Paper Mill; Redford, J., Smith, Stone & Knight; Rothwell, Mark, R. Fletcher & Son; Sedgwick, J. B., Smith, Stone & Knight; Shingles, T. H., John Dickinson & Co.; Sindall & Bacon, Consulting Chemists; Smith, C. K., Golden Valley Mills; Smith, T. P., Smith, Stone & Knight; Snape, F., C. Marsden & Sons; Snelling, C., Empire Paper Mills; Smart, E., Donside Paper Co.; Starnes, A. H., Piries Photographic; Stewart, J., Donside Paper Co.; Strachan, J., Donside Paper Co.; Sun Paper Mill Co., Feniscowles; Seddon, J., East Lanes. Paper Mill; Tosher, A., Alex. Pirie & Sons; Tootell, H. M., Chas. Marsden & Sons; Turner, J., Wall Paper Mfrs.; Tod, A. K., Polton Mills; Wall Paper Mfrs., Hollins Paper Mill; Walsh, George B., Wall paper Mfrs.; Walsh, R., Wall Paper Mfrs.; Wilkie, D., Donside Paper Co.; Winskill, J. W., Irish Paper Mills Co.; Wolstenholme, J., G. Walmsley & Co.; Woolley, E., Smith, Stone & Knight; Wright, W. S., Irish Paper Mills Co.; Walker, J., Iveresk Paper Co.

**ABITIBI BONDS PAYABLE IN NEW YORK FUNDS.**

It is announced that, as a result of arbitration, the decision has been made that the \$1,000,000 Abitibi Power & Paper Company 7 per cent Convertible Debentures redeemed by the company at 110 and interest on April 1st last are payable in New York funds.

In accordance with the decision, it is understood that Montreal Trust Company will forward cheques on November 3rd to all debenture holders registered as of April 1st, 1920, for the amount of the premium on New York funds, as at that date, together with interest from April 1st to Nov. 3rd, the date of payment.

The legal point involved is both an important and interesting one. It will be remembered that at the time the Abitibi Company redeemed the debentures there was a divergence of legal opinion as to whether the company should redeem them, paying for them 110 and accrued interest in Canadian funds, or the same amount in United States funds which were then at a premium. Royal Securities Corporation, the original underwriters of the issue negotiated an arrangement on behalf of their clients with the Abitibi Company whereby the legal point involved was submitted for arbitration to Eugene Lafleur, K.C., of Montreal. A decision has now been given with the results indicated.

**A NEW WATERMARK.**

One of the most popular low-priced bond papers is Ferneroft Bond. Hitherto the manufacturers were unable to watermark it, but with those difficulties overcome our customers can now obtain this very desirable quality with the watermark "Ferneroft Bond, Made in U. S. A."



## British Trade News

(From Our London Correspondent)

London, 19th October, 1920.

"No profiteering in the paper trade," is the verdict of the Imperial Government. Inquiries recently instituted resulted in the decision. It was contended that because profiteering in regard to prices was going on in some of the other industries, the paper industry might be wanting to get rich too quick; but investigations have removed all disparagements and aspersions and the short and humble announcement is now made that there are no profiteers in paper.

### Big Coal Strike—Mills on Half Supplies.

Today the United Kingdom is in the middle of a series of strikes and threatened strikes, the most damaging of which is the coal miners' strike. The men have now left the pits and paper mills are only allowed half their usual supplies. It is a very serious matter for employers and workers alike, and the hope is expressed that no delay will be lost in enabling the miners and their employers to come to a decision, satisfactory to both, with all possible speed. If they don't it means in the paper industry that unemployment will work out as follows:—

	Workers.
(1) Out of work in a week	4,500
(2) Out of work in 2 weeks	6,000
(3) Out of work in 5 weeks	34,500

These figures may look small on paper, but actual facts go to show that if these 34,500 workers are outside the mill in a month's time the distress will be something enormous, as the printing and publishing trades will be affected in their turn. It is true that most of the mills have fair supplies of coal in stock; but if the coal miners stop away from the pits for two weeks, say, that will mean four weeks before a mill could get replenishment as transport would have to be set in motion again and it would take sometime before the pre-strike output could be reached in the mines. The miners have it in their hands to ruin both themselves and the industries of the country. It is an intolerable state of affairs to think that because miners want an increase of wages—they are at present nearly double those of papers workers—34,500 workers in the paper industry should be thrown out of work and more particularly at a time when competition is keen and new improvements are being effected in mills to meet that growing competition. Everybody hopes before long there will be a path of conciliation and that the present crisis will be ended. The paper mills are at the mercy of the coal miners and being a horrible state of affairs, Canadians will readily see the advantage of being independent of the pits.

### What The Three-Shift Means In A Mill!

Mr. Robert Gilroy, Messrs. A. M. Peebles & Son, director of mills, which are at Rishton, Whiteash, and other places, recently gave his views on the raw material market and the three-shift-system in the paper mills, to his co-directors. "The past year," he said, "must be regarded as memorable in the annals of the paper trade owing to one particular fact—the universal introduction of the three-shift system in our manufacturing departments. This change came at a most unfortunate time, when skilled men were very scarce—very few were available. This, in effect, meant that this third shift had to be drawn from the unskilled ranks, and during the probationary period it of

necessity followed that our working results during the year were not so efficient or economical as they would otherwise have been. We have now got over that probationary period, and are now working under the new system very well indeed. As the result of the third shift our wages bills have been considerably increased, and under this heading, compared with the year 1913, we find that the difference in our wages bill alone is an increase of £35,000. After the national agreement recently expired there was a still further demand for increased wages, and, here, again, I am afraid this figure will be further increased by at least £6,000. On the whole, however, we have been able to meet all the requirements fairly well and I am glad to be able to report that your production has found an ever-ready market. Your customers are greater in number than probably they ever had been in the history of the company and I think this at least bears ample evidence that our production must be pretty well all right. Today I am also glad to report that despite the stagnation of trade generally, all our three mills are very well employed and we possess a very full order book—sufficient, I think to keep us going for several months ahead, so that in regard to the current year we have a very good send-off."

### Raw Materials.

Mr. Gilroy, commenting on the raw materials markets, said that during the past year it could not altogether be said that the river had run smoothly, for in common with practically every other industry in Great Britain Peebles & Son had their troubles and trials and ups and downs. In the early part of the year they experienced considerable difficulty in negotiating supplies of Esparto grass. It took several months, for some reason or other, to collect a few hundred tons, and he found in regard to that important material that we were months on end without a blade. The wood pulp market had also undergone another change since last year in the direction of higher prices and even to-day he found that still further increases are demanded.

### Pulp-Making Plant Scrapped.

Mr. John Garnett, who was chairman of the old Hartlepool Company for 15 years, said he was delighted to know the present company in its first six months working is able, without touching the earned profits from the working of the mill to put before the shareholders resolutions increasing the capital and authorising the capitalisation of reserves. The question of profits for the years previous might be answered in this way: The old company was one manufacturing its own pulp as well as paper. For some years before the war, and for a year or two after the war was started we were suffering from very adverse circumstances in connection with pulp making; so much so that the directors of the old company decided to scrap the whole of the pulp-making plant, and they did so with fair advantage because although some of the plant was only two or three years old the price of lead and antimony rose to such an extent through the war that we were able to scrap the whole new plant and get, if anything, actually more than we paid for it as new material. During those years we were not able to make, in my opinion, anywhere near the profits that we should have made if we had been making our own pulp. In conclusion, Mr. Garnett, who is one of the oldest British papermakers, predicted great success for the new Hartlepool Paper Mill Company under the new conditions of working.

### Forcing Down Newsprint Prices.

Every effort is being made by publishers and printers in the United Kingdom to force down the prices of newsprint. There appears to be a combined movement, irrespective of what raw materials are costing to produce and get shipped into the British market, and the result is that all sorts of rumours are flying about London. Some people suggest that in the near future newsprint will be brought in London for 9 cents a lb. Another "enlightened" Editor—we have many of them in London—says in his trade paper to publishers: "We think the paper merchants and agents have been largely in the hands of the mills, and the Profiteering Act is not, we regret to find, to be applied to the manufacturers as was believed to be the intention a week ago." There is no harm in thinking, but if the Profiteering Act does not apply to sellers of newsprint it stands to reason that they are trading legitimately and legally. If you asked a publisher to-day in London what ground wood was a ton it is doubtful if he could tell you; yet he will level the charge of profiteering against the newsprint industry because he pays nearly double what he had to in pre-war days—more if he buys in spot lots. It is stated in London that several mills in Sweden have ceased work or cut down their production of newsprint owing to the lack of British and other foreign orders. Mill owners have decided, however, not to cut prices as the majority of the mills allege that their English customers, with large stocks in hand, are purposely holding back in order to force Sweden to cut her prices.

### FRASERS BUY MINTO COAL AREAS.

Following the recent announcement that the International Paper Company had purchased holdings in the Grand Lake coal areas, notice is published in the Royal Gazette to the effect that the Fraser interests, who now have two pulp mills in New Brunswick, and have been planning further development, have also recently taken an interest in coal holding at Minto.

Archibald Fraser who handles the pulp and paper branch of the Fraser Companies business, is one of the incorporators of the Welton and Henderson Limited, a new company with a capitalization of \$75,000 which has just been granted letters patents for carrying on a general coal mining business with head office at South Minto.

The other incorporators are Harvey Welton, Minto, a well-known coal operator in that district, and John Henderson formerly manager for the Minto Coal Company, Limited, and who has lately been operating mines of his own.

The new company have taken over the Jeremiah Cockley mine, which was recently purchased by Mr. Henderson at a reported price of \$40,000, as well as Mr. Henderson's mines, which were formerly owned by Smith and Merrithew, Limited. They control about 150 acres of coal areas.

### WAS EX-MANAGER OF PARSONS LONDON OFFICE

In John W. Stebbins, who died on the twenty-third of last month, there passed away one of the sunniest of men, at the prime of life.

Brought up as a thorough paper man, he joined Parsons Brothers, New York, and was in charge of their London Office from its opening in August 1900 to 1906, when he returned to his native land and rejoined the American Writing Paper Company.

### MAKING PULP AND PAPER MACHINERY.

It will no doubt be of interest to the Pulp and Paper Trade of Canada to know that the well-known firm, Engineering and Machine Works of Canada, Limited, located at St. Catharines, Ontario, has begun the manufacture of pulp and paper mill machinery. They will manufacture three and four pocket grinders, diaphragm screens, six to eighteen plates inclusive, wet machines, deckers, cylinder moulds, and 48, 84 and 90" chippers.

W. R. Tidmarsh, formerly of the Union Iron Works, Bangor, Maine, is in charge of this work.

### HELIN EXAMINES NELSON PROJECT.

H. Helin, the pulp and paper expert engaged by the board of trade industrial committee to make a report upon the possibilities of pulp and paper manufacture at Nelson, B.C., has completed a two-days' examination of conditions.

He went to Bonnington Falls and looked into the power situation; went out to the Baskin-Stedman Timber limits on Eagle creek, and examined the various sites on this side of the lake as far up the West Arm as Five-Mile. J. E. Annable, chairman of the industrial committee; W. M. Cunliffe, President J. R. Hunter, and Commissioner Fred. A. Starkey assisted him at one stage or another of his inquiries.

Mr. Helin was formerly general superintendent of the Whalen Pulp & Paper company, Vancouver, and is at present a director of the Western Canada Pulp & Paper company, Vancouver.

### TECHNICAL COURSE AT IROQUOIS FALLS, ONT.

The technical courses for this winter, as planned by the Abitibi Power & Paper Co., are very comprehensive and include:—

Wood technology. — Physical and technical properties of wood from the pulp and paper point of view.

Groundwood Pulp. — Process from the wood to the finished pulp, with special detail of the grinder room operations.

Sulphite Pulp. — The manufacture of sulphite pulp from the chips to the finished product.

Paper Manufacture. — Newsprint paper manufacture from the refined pulp to the finished product, with details and theory of the process.

Acid Making. — The theory and practice of it with references to the chemistry of the subject.

Steam Plant. — Theory and practice of steam generation.

Screening and refining of sulphite and groundwood pulp.

The details of the courses have not been fully developed, but while of a technical nature they will be sufficiently popular that any man working in the mill will be able to get a great deal of information from the lectures referring to his department.

F. W. Nugent has been appointed as representative of McArthur, Irwin Ltd., paint and color people, with headquarters at 127 Wright Street, St. John, N.B. Mr. Nugent for the past nine years was associated with the jobbing firm of Robertson, Foster & Smith, St. John, and in his new work will cover the Maritime Provinces and Prince Edward Island.

When hurry interferes with Safety, cut out the hurry, says the Safety League.

### BOOST FOR VOCATIONAL TRAINING.

By the gathering of representatives of the various Provinces, embracing the whole Dominion, at Ottawa, last week, technical education received a most decided boost. Ministers of education together with their chief advisers were present.

Perhaps the keystone for the holding of the conference was really to bring about such a state that would exert itself in an active force with the Department of Labor.

At the opening of the conference on Monday it was announced that the session would be in private. A publicity committee was appointed and its report said, Hon. G. D. Robertson, Minister of Labor, had briefly addressed the conference. Hon. G. P. Smith, Minister of Education for Alberta was appointed chairman. Mr. L. W. Gill was appointed secretary of technical education. The following subjects relating to technical education were listed for discussion: Teacher training, prevocational classes and vocational guidance, courses of study, text-books, condition for entrance to technical classes, length of school year, length of school day, educational reports, method of preparing, general supply of teachers and other subjects.

The conference on technical education will be followed immediately by a conference on educational statistics, which has been arranged by the statistics branch of the department of trade and commerce.

The earlier part of the days proceedings was devoted to a discussion of the broad question of the training of teachers for technical education. The discussion centered chiefly on a proposal to establish a central training institution to serve all the provinces of Canada. The function of this training school would be to train all the vocational teachers required in the various provinces, and the following were suggested as some of the conditions under which such an institution might be established:

- (1) The Dominion Government to provide the building and equipment.
- (2) Cost of maintenance to be borne by the federal and provincial governments on a fifty-fifty basis.
- (3) Management of the central training school to be under a board of governors, representative of each province and the Dominion government.
- (4) The institution to have a dual staff—French and English.

#### Junior Industrial Course.

Subsequent discussion turned on the question of establishing a junior industrial course as a preparation for definite vocational training. The opinion of the conference was that such a course offered pupils a better opportunity for educational development and for the choice of a suitable subsequent course of duty. Further, in the course of the discussion, the point was brought out that a system of vocational guidance ought to form an essential part of a junior industrial course.

A committee on resolutions was appointed under the chairmanship of Dr. F. W. Merchant, director of technical education for Ontario.

### CHANGED THEIR OFFICE.

The purchasing of the Howard Smith Paper Mills, Limited, and the Toronto Paper Mfg. Company, Limited, is now conducted from the Head Office, 138 McGill Street, Montreal.

All correspondence and invoices should be sent, and calls made to this address in future.

### PUBLICATIONS IN QUEBEC INCREASE.

Notwithstanding recent enormous increases in the cost of paper the number of publications issued in the province of Quebec has increased during the past year, the increase being the greatest in Quebec, of any province of the Dominion. This, and many other interesting facts regarding the publications of Canada, are given in the latest edition of Desbarats Newspaper Directory, just issued.

The number of daily newspapers in the Province has been increased by two, but the greatest increase is shown in weeklies and monthlies. Two years ago there were 97 weeklies and 56 monthlies in the province. The present directory shows 104 weeklies and 74 monthlies. The cost of newspapers to the reader has been increased in many cases, but the loss of circulation has been trifling, and although the advertiser is paying more for his publicity the volume of advertising is materially increasing.

The Rolland Paper Company has just sent out a very attractive sample book, showing the following papers—Donnacona, Canada, Columbia, Monogram, Arcadia, Maple Mills, Duplicating, Typewriter papers, Manilla.

### NEW PAPER MACHINES — 1920 AND 1921.

There was recently printed in the United States Paper Maker a record of 100 new paper-making machines scheduled for installation in United States paper mills in 1920 and 1921. It is notable that of this number only five machines, with a combined capacity of 145 tons per day, are to be installed in wrapping mills. It was estimated that this would increase the annual production of wrappings by only 5 per cent over the 1919 production.

Sixteen new machines, with a daily capacity of 280 tons, are scheduled for installation in tissue mills. This, it is figured, will increase tissue production by 84,000 tons over the output of the year 1919, or 54.1 per cent.

### GETTING RAGS FROM EUROPE TO MAKE BUILDING PAPER.

A considerable business is being done at the present time in the shipment from European countries of large quantities of rags for the manufacture of felt building paper, roofing slates and patent roofing. The rags are brought over in varying quantities by ships reaching Montreal, and this year a large paper concern has, in return, begun the shipment of quantities of rags of a different grade collected on this side of the Atlantic, for the purpose of manufacture into articles for which a demand here is not readily available.

### ONE ON US.

Little Nelly told little Anita what she terms "only a little fib."

ANITA—"A fib is the same as a story, and a story is the same as a lie."

NELLY—"No, it's not."

ANITA—"Yes, it is, because my father said so, and my father is a professor at the university."

NELLY—"I don't care if he is. My father is an editor, and he knows more about lying than your father."—Blighty. And the editor was once a professor!

Mr. E. W. Tobin, M. L. A. of Sherbrooke, who is a director of the Brompton Pulp & Paper Co., has returned from Europe.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A-12; K-10, 19.** Notes on coating and tub-sizing. Papyro, Papeterie, **42**, 290-4, (Apr. 10, 1910), 352-9, (Apr. 23, 1920). In coating the quality of every shipment of gelatin or casein employed should be tested, as it is very variable. Methods of testing are given. The principal other factors to be regulated are the concentration of the temperature of the solution during coating, the solution, the temperature, at the point where the coated paper enters the drier, and the maximum temperature of the air in the drier. The main points to be considered in tub-sizing are the speed of the machine, the thickness of the paper, the amount of size, and the cleanliness and relative humidity of the air that comes to the drier.—A. P.-C.

**C-5 G-0.** Guarding against fungi in wood and wood-pulp. Otto Kress, C. J. Humphrey and C. Audrey Richards, Forest Products Lab., Madison, Wis., Paper, **26**, 675-7, 733-5, 787-8, (1920). As the results of comparative tests using clean and infected groundwood pulp, the latter was shown to have the following drawbacks: 1) Decided decrease in fiber length, so affecting the yield, felting quality of the stock, strength of the finished paper, and slowness of the stock. 2) Infected pulp is too free. While groundwood pulp is often considered too slow, the extreme freeness of the infected pulp would offer difficulty in carrying the necessary water on the paper machine and in securing a good formation in the finished paper. 3) Infected pulp is much darker, thereby dulling either white or colored sheets in which it is used. 4) The yield of finished paper based on the percentage of groundwood used is decreased approx. 10 per cent. 5) The strength of the finished paper is decidedly reduced. In a groundwood-sulphite furnish this decrease in strength would necessitate the use of a larger per cent of the more expensive sulphite pulp in the furnish. 6) Infected pulp on the paper machine offers difficulty in sticking to the couch and press rolls and in excessive foaming. 7) Infected pulp will require more sizing. 8) Infected pulp will make a very dirty sheet. The deterioration of wood and pulp is due principally to 2 classes of fungi, viz., wood-destroying fungi and molds. The former cause a marked deterioration in the strength of the pulp while the latter do not. The distinctive characteristics by which the 2 classes can be distinguished are described. A series of tests have been undertaken to determine the value of treating the pulp with various antiseptics, but results are not yet available for publication. So far as known at present, the best remedial measure consists in proper sanitation on conditions for the storage lot of wood and pulp.—A. P.-C.

**D-4** Increasing efficiency by speed control of turbine driven pulp grinders. Adolph F. Meyer, Paper, **26**, 721-9, (1920). The data respecting the effect of speed on power consumption of turbine driven grinders are so conflicting as to indicate no relation between these factors. Desirable speeds may therefore be determined solely from the point of view of the efficiency of the turbine driving the grinder. For a given head and gate opening, there is a definite speed at which the turbine will work most efficiently and give maximum

power. This speed varies according to the head and the gate-opening. Relatively small departures of the speed from the optimum speed cause appreciable lowering in efficiency, especially an increase in speed. Under ordinary conditions, there are very great variations in the total amount of pressure applied to the face of the stone and corresponding variations in speed, resulting in considerable loss of power. The author has devised a governor whereby the pressure with which the wood is pressed against the stone is varied so as to produce a uniform friction load irrespective of the no. of pockets momentarily in use, binding of the wood in the pockets, or size and character of the wood ground. It is claimed that the speed can thus be maintained within 4 R. P. M. of the desired amount about 90 per cent of the time, and within 5 per cent of normal for all but rare periods of a few seconds. The regulator can be set for any desired rate of speed by the mere turn of a hand wheel. Charts are given to show the performance of the instrument under actual mill conditions.—A. P.-C.

**R-14** Research in papermaking. J. L. MacDonald. World's Paper Trade Rev., Paper, **26**, 639-40, (1920). A discussion of the importance of pure and applied research in industry, with special reference to the English paper industry. The part of fundamental, or pure, research is shown to be of the very greatest importance, as it is the source of the information which is later applied, through the medium of technical research, to the actual operations in the industry.—A. P.-C.

**E-1.** Control equipment for sulphite mills. E. R. Barker, Paper, **26**, 362-6, (1920). A description of recent improvements tending to make acid-making and cooking as nearly automatic as possible: SO<sub>2</sub> recorders, recording pyrometers, automatic dry and melted-S feeds, sublimed S detectors, cooler water temperature regulator, Crandon system of acid control for regulating the flow of water so as to obtain constant acid composition, recording thermometers and pressure gauges for digesters, Dooley's acid filling system.—A. P.-C.

**E-1.** Control of sulphite cooking. W. E. Byron Baker, York Haven Paper Co., York Haven, Pa. Paper, **26**, 310-2, (1920). A brief discussion of the importance of the following observations: 1) Gauge pressure (total pressure), 2) temperature, 3) gas tension, or pressure of dissolved SO<sub>2</sub>, 4) density of the liquor in the digester, 5) concentration of total SO<sub>2</sub> present, 6) concentration of SO<sub>2</sub> combined as CaSO<sub>3</sub>, 7) "changed S" concentration, 8) reversible or loosely combined SO<sub>2</sub> present, 9) CaO (and MgO) present in the liquor. Indications are given as to the manner of making the observations.—A. P.-C.

**E-4.** Advantage of liquid sulphur dioxide in sulphite pulp manufacture. Vance P. Edwards, Engineer in Forest Products, Forest Products Lab., Madison Wis., Paper, **26**, 350-4, (1920). The advantages are of 2 classes; those which can be directly estimated in money, and those which, owing to lack of data or other causes, cannot be so estimated. The use of liquid SO<sub>2</sub> would do away with S burners and SO<sub>2</sub> coolers, smaller piping could be used, a stronger acid could be made in a shorter time, H<sub>2</sub>SO<sub>4</sub> and sublimed S would

be eliminated, the cooling of the gas on expansion could probably be utilized for cooling the relief gas, and it might be possible to do away with the raw acid tanks. The elimination of  $H_2SO_4$  would undoubtedly improve the quality of the pulp and at the same time decrease the cost of cleaning the acid system and piping of precipitated lime and the rapid depreciation of such equipment. The effect of using an acid containing 10-15 per cent total  $SO_2$  remains to be investigated; but the results of experiments carried out at the Forest Products Lab. tend to show that the yield is increased and the time of cooking decreased, the increase in output amounting to as much as 37½ per cent. Economic factors must also be taken into consideration, and mills could hardly use liquid  $SO_2$  economically if they are at a considerable distance from the source of supply. It is estimated that with  $S$  costing \$24 a ton, liquid  $SO_2$  at \$15 a ton would be profitable. The method of manufacturing liquid  $SO_2$  is briefly described.—A. P.-C.

**E-5. The chemistry of sulphite cooking.** A. Chambonet. *Papeterie*, 42, 242-7, (Mar. 25, 1920); 294-6, (Apr. 10, 1920). Conclusion of art. abstracted in *Pulp and Paper*, 17, 736, Aug. 28, 1919. After discussing the reaction between the liquor and the non-cellulose compounds other than lignin, and the formation and effects of  $SO_2$ , the author briefly summarizes his results which are that the  $SO_2$  is used up by the formation of Ca lignosulphonate, of unstable addition compounds, and of  $H_2SO_4$ .—A. P.-C.

**E-5. Value of Superheated steam in the sulphite process.** Robt. H. Wyld. *Paper*, 26, 674, (1920). Definite test data are lacking to show the exact value of superheated steam. It eliminates the variations in quality of steam, reduces the dilution of the liquor in the digester, and consequently effects a saving of  $S$ . It is claimed that the use of superheated steam gives a better recovery of  $SO_2$ , enables a lower cooking temperature to be used, and that the cooking may be accomplished in a shorter time without sacrificing quality. Most of the value of superheated steam for the digester is probably obtained by a superheat of about 100-150 deg. F.—A. P.-C.

**F-2. Fuel from sulphite liquor.** Geo. Barsky and Ralph H. McKee, Columbia University. *Paper*, 26, 368-72, (1920). A discussion of the amount of heat or power which can be derived from waste sulphite liquor. The liquor can be burned in the form of a pitch containing about 50 per cent solids, in an ordinary form of oil burner. Detailed calculations are given, both for raw liquor and for air-fermented liquor, showing that the solid material of the waste liquor has sufficient fuel value to evaporate the liquor, and enough in addition to supply some power or steam for other purposes.—A. P.-C.

**F-4. Black ash leaching.** Geo. M. Trostel, Champion Fiber Co., Canton, N.C. *Paper*, 26, 390-2, (1920). The suggested method of treatment is essentially as follows: the black ash is crushed to reduce all lumps larger than 1", mixed with enough weak liquor so that it can be handled by an open impeller centrifugal pump, ground in a tube mill, delivered to a receiving tank with an agitator, and from there to the rotary filters, water being added in the tube mill and receiving tank in such amounts as to give the desired strength of liquor. The advantages of this method as compared with leaching in cells under pressure are discussed.—A. P.-C.

**F-4. Black liquor recovery process.** G. F. Enderlein, Brompton Pulp & Paper Co. Ltd., East Angus, Que. *Paper*, 26, 356-60, (1920). A discussion of the source of loss, and inefficiency in the recovery of black liquor which may be due to incomplete washing of the pulp, loss by foaming over in the evaporator and tanks, salts decomposing from the heat in the furnace, and salts carried away mechanically by the draft, loss of salts in the lime sludge from the causticizing tanks, loss in leaks at pipes, connections, valves, pumps and tanks, spattering out from tanks in making up the liquor. (See *Pulp & Paper*, July 15, 1920).—A. P.-C.

**K-2. Recovery of colloids from paper mill waste water.** Waldo S. Coulter, Industrial Wastes Engineer, New York. *Paper*, 26, 590, (1920). The solids in paper mill waste water contain a considerable amount of colloidal matter which cannot be directly filtered out. This can be removed by means of a "colloidizer," or surface to which the colloid is attracted by absorption; but this requires either a relatively long time or a very large surface. The particles of intercepted sludge may be used as "colloidizer," thereby furnishing a very large aggregate area. A flotation process may also be employed which requires no moving parts, whereby the suspended matter is concentrated, floated to the surface, and can then be filtered with a fine-mesh screen.—A. P.-C.

**K-7. Jordan and beater in papermaking.** Max Zimmerman, Chas. Boldt Paper Mills, Cincinnati, O. *Paper*, 26, 376, (1920). For high-grade lightweight paper long beating and shorter treatment in the jordan is the more satisfactory. For making heavier weights of high grade paper, it is best to use the jordan more extensively and do less work in the beater. For box board made on cylinder machines less work in the beater and more on the jordan has proved more satisfactory.—A. P.-C.

**K-12. Sectional individual motor drive for Paper machines.** Stephen A. Staeger, Westinghouse Electric and Manufacturing Co. *Paper*, 26, 382-8, (1920). Formerly the main defect which prevented the general application of sectional individual motor drive was the lack of proper speed regulation, which must be maintained to less than 0.1 per cent. The problem has now been solved satisfactorily. The advantages of sectional individual motor drive as compared with mechanical drive are set forth. (See *Pulp and Paper* 18, 616, (1920).

#### CORRECTION TO EXPORTS AND IMPORTS REPORT.

Just as our last form was going to press, the following was received: Comparative statement of value of pulp and paper exports for first six months of fiscal years 1918, 1919 and 1920 should read as follows:—

Paper . . . . .	\$21,821,915	\$27,119,246	\$43,025,764
Chem. pulp . . . . .	15,903,189	14,008,388	33,579,554
Mech. pulp . . . . .	2,512,086	2,618,338	10,638,158

Totals . . . . . \$40,237,191    \$43,745,972    \$87,243,476

On page 1133 the figures given as those for the first six months of 1918 covered merely the month of September. The correct returns are shown above. Consequently, exports for the first six months of 1920 were about 105% greater in value than were those of the corresponding period of 1918.



# UNITED STATES NOTES

Figures on newsprint imports given out at Washington last week show that Scandinavian nations have become active competitors with American concerns for the print paper market of the United States. Total imports in August of this year amounted to 73,513 tons against 47,131 in August, 1919, and of the total 71,222 tons were received from Canada, 780 from Norway and 2,213 from Sweden. A year ago imports came from Canada exclusively. Since August Germany has swelled the volume of imports from Europe by approximately 3,000 tons. Finland, according to Hjalmar Gronvik, managing director of the Finnish Paper Mill Union, is preparing to put about 210,000 tons of print paper on the American market during the coming year. Mr. Gronvik and an associate, Walter Graesbeek, managing director of the Finnish Cellulose Association, arrived in New York City recently from Gothenberg, Sweden. Both say that their visit to America is being made with a view to making the most of the opportunity afforded by the critical newsprint situation in the United States. This growing volume of print paper imports from European countries is having its effect on prices. During the shortage some months ago publishers had to pay as high as 16 cents a pound to jobbers. The current quotation is 9½ cents. German interests, it is reported, expect to lay print paper down in New York at 7½ cents.

Walter S. Taylor, of Elizabeth City, N.C., is named as chairman of the board of directors in articles of incorporation recently filed with the Secretary of State of North Carolina by the Consolidated Pulp and Paper Company. The capital of the company is put at \$1,500,000, and its object is declared to be the manufacture of paper and paper pulp.

Business houses and stationers throughout New York city who may have need of calendar pads and diaries, 1921 editions, are likely to find that these articles will be hard to procure around the holiday season this year. Officials of the Royal Ribbon and Carbon Company of New York see in the white paper shortage and in the consequent under-production of certain kinds of printed articles an indication that there will be a dearth of the calendar pads and diaries required for the holiday trade. Stationers are being advised to stock up on these articles immediately in order to obviate any possibility of running short at the first of the year.

Hearing of a rain making experiment at Battle Creek, Mich., that was reported to have met with success, officials of the St. Regis Paper Company are arranging to meet future droughts in the Black River region of New York by using a similar system for producing rain. Citing the Battle Creek experiment, Mr. C. C. Burns, general manager of the company, declared that the innovation would not prove expensive considering the results obtained. The plan is to employ the services of an aeroplane which will fly to a very high altitude and explode bombs, affecting the air so as to cause a condensation of the moisture into clouds which give forth the rain necessary to flood the streams. It is claimed that at Battle Creek a three days rain was

brought on through the application of the system at a time when all other sections of Michigan were dry.

The Specialty Paper Box Company, manufacturers of general lines of paper boxes and specialty carbor paper boxes, has removed from its plant in Mercer street, Manhattan, to a new factory at 84-90 Evergreen Ave., Brooklyn. This move was made necessary by the firm's growing needs for greater operating space. Much additional equipment has been installed in the new plant, greatly increasing the capacity and facility of the company's output.

John A. Dix, former Governor of New York State, is reported to be planning the construction of a pulp and paper making plant at Ogdensburg, N.Y. Mr. Dix, who has been prominently identified with paper manufacturing for years, recently visited the Maple City accompanied by Mrs. Dix and Thomson Douglas, a business associate, for the purpose of making a preliminary survey of the possibilities for a suitable mill site on the water front. Mr. Dix is believed to have in mind the locating of a mill on the St. Lawrence River because of the accessibility of Canadian wood pulp. While no announcement has been made, the former Governor is said to be partial to the Ogdensburg location. Just who is associated with Mr. Dix in the project is not yet known.

Probable earnings of the Union Bag and Paper Company this year are being estimated as high as \$20 a share on the common stock. On the basis of the statement for the first six months, the company should make the best showing in its history this year. Production and sales during the usually lean summer period are said to have reached a new high mark. Gross sales are expected to exceed \$16,000,000 against approximately \$12,000,000 in 1919 and \$11,600,000 in 1918. The company receives an income from its investment in the St. Maurice Paper Company, its Canadian subsidiary, equivalent to \$2.60 a share. This stock was recently put on an \$8 a share dividend basis, an increase of \$3 a year, and has paid this year 30 per cent in stock and \$5 extra.

While prices of most papers are continuing to maintain the same level, paper boards in the Philadelphia market have declined to \$60 and \$65 a ton. Quotations a week earlier showed prices of \$80 and \$100 for this same commodity. The slump is attributed to the almost complete suspension of activities by paper box makers. The prevailing rate, Philadelphia board makers say, is actually below the cost of production, but was made because of the flood of commons which have come into this market. Buying, they believe, will be stimulated by the low-price, which, everything considered, can be but temporary. The board decline of course has had its effect on the paper stock market.

Plans for a Statewide organization on Pennsylvania to be known as the Forest Guides and to be part of the Boy Scouts have been worked out by Forestry Commissioner Gifford Pinchot and Solon Parks, Boy Scout executive of Reading, Pa. Co-operation of all scout masters and executives in Pennsylvania will be asked. The idea will be to have boys enroll to protect and conserve forests and wild life and to prevent and extinguish fires.

# PULP AND PAPER NEWS



A fire, which broke out in one of the power houses of the Hydro Electric Power Commission caused a shut-down of the Hydro's pulp mill at Campbellford last week. A large force of men quickly got the plant under way and shipments of pulp have been renewed. The mill was got running again this week.

Mr. John Martin, of Winnipeg, ex-president of the Canadian Paper Trade Association, was in Toronto this week on his way back to Winnipeg after visiting the Laurentide, Provincial and other mills with which his paper firm in the west does business.

A meeting of the committee on text books for the paper industry was held in Toronto this week under the chairmanship of Mr. George Carruthers when a number of details connected with the movement were discussed. Excellent progress is being made with the preparation of the text books. The first of the series is expected to be on the press at the beginning of the year.

Mr. William Banks, editorial writer and former news editor of the Toronto Globe, is leaving the staff of that newspaper after twenty-one years service, to take charge of the literary department of the British and Colonial Press, Toronto. Mr. Banks was at one time a reporter on the Mail and Empire, leaving that paper to take a similar position on the Globe, where he has successively filled the posts of cable editor, city editor, news editor and editorial writer. Early in 1919 he covered some of the opening sessions of the Peace Conference in Paris. He is a frequent contributor to Canadian and American periodicals.

The current issue of the Ontario Gazette contains a notice of incorporation of the Welland Tribune and Telegraph, Limited, a company formed as the result of the amalgamation of the two papers in Welland. The capital stock is \$125,000.

A new company has been formed in St. Thomas, Ont., to be known as the St. Thomas Box Company, Limited. The new organization, which has been granted a provincial charter, will manufacture, sell or deal in paper, cardboard and other boxes, and paper and cardboard products. The capital stock is \$40,000 and the provisional directors are T. J. Agar, L. J. Phelan, D. P. J. Kelly, I. Levinter and Frank Cronin.

The Miller Lithographic Company, Limited, has been incorporated by Toronto lawyers, with a capital stock of \$91,000 and with power to carry on business as printers, lithographers, process printers, publishers, etc.

Mr. H. F. Weld of the Farmer's Advocate, Winnipeg, was in Toronto this week on business.

Mr. Fred Smith, of Smith Davidson and Wright, paper jobbers, Victoria, B. C., was in Toronto calling on the trade during the past week.

The many friends of Mr. H. B. Donovan, sales manager of the Canada Paper Co., Limited, will be pleased to know that his condition is somewhat improved and that he will likely be able to resume

his duties before the end of the year. Mr. Donovan's illness appears to be the direct result of too close application to business for years without a real rest and the Canadian paper trade generally will be glad to greet him when he is permitted to rejoin the fraternity. He is at his new home in Oakville Ont., which he recently purchased.

The death took place at Ingersoll, Ont., on Oct. 31, of Mrs. Joseph Gibson, wife of Postmaster Joseph Gibson, of that town and the mother of Lieut. Col. Thomas Gibson, Vice-President of the Spanish River Pulp and Paper Mills, Limited, and of Mrs. J. C. Gibson, Secretary of the same company. The late Mrs. Gibson died following a stroke of paralysis which she sustained about ten days ago. Col. Gibson had just returned from attending the regular monthly meeting of his company when he was summoned to his mother's bedside where he remained until she passed away. The many friends in the paper trade, particularly, will sympathise with the Spanish River officials in their sad bereavement.

Colonel George Ham, publicity commissioner of the C. P. R., was the guest of honor at a dinner given by the Toronto Women's Press Club this week.

Addressing the Empire Club in Toronto this week Hon. Louis Athanase David, K.C., LL.B., Provincial Secretary and Minister of Education for Quebec, severely criticised the policy which permitted the exportation to the United States of Quebec's pulpwood to be manufactured into paper. Pulpwood thus exported, he said, became worth \$75,000,000 annually under the industry of the United States workmen. In this conversion of pulpwood into wealth on the other side of the border he estimated that there was a loss of \$66,500,000 to Canada, of which amount the Canadian workmen would have received about \$25,000,000 had the raw material remained in Canada and been manufactured into paper in Canadian mills.

Mr. David F. Robertson, General Manager of the Canada Box Board Co., Limited, Montreal, spent several days in Toronto this week calling on the Company's customers, along with the local representative Mr. James Logie. Mr. Robertson reports that the work of installing the new boilers and other repair work at the Frankfort mill is proceeding satisfactorily and that the mill is now running again after a couple of weeks shut-down. It is expected that the pulp mill will be in operation by December 1st, the grinders and other equipment now being pretty well advanced in their installation.

The many friends in the paper trade of Mr. L. E. L. Harvey will be pleased to know that he is back again in the Toronto office of the George H. Mead Company after several weeks in hospital in Montreal where he was operated upon for a recurrence of trouble due to a wound received while on active service overseas.

The Toronto office of the Howard Smith Paper Company, Limited, report the installation of three

new digestors in the Cornwall mill and that three more will be added which will double their pulp production capacity. The mill will be running early in the new year.

Mr. F. L. Ratcliffe, of the Ratcliffe Paper Co., Limited, Toronto, was in Brantford this week attending the annual convention of the Baptist denomination of Ontario and Quebec.

The Toronto Carton Club held its regular monthly luncheon at the King Edward Hotel, Toronto, this week, and discussed routine matters pertaining to the trade.

Mr. S. J. Moore, President of the F. N. Burr Company, manufacturers of counter check books, was elected President of the Baptist Association of Ontario and Quebec at the annual meeting this week in Brantford, Ontario.

Lieut.-Col. T. Gibson, Vice-President of the Spanish River Pulp and Paper Mills, Limited, is the returning officer for the Northeast Toronto by-election and has appointed twelve women to be deputy returning officers.

The Gaspereaux River Light, Power and Heat Co., of Wolfville, N. S., was recently incorporated. The company intend to erect a pulp mill to produce 2,500 tons a year. At present the Wolfville Electric Light Commission is being supplied with power and light by the Gaspereaux Company of which C. H. Wright is president and R. A. Jodrey secretary-treasurer.

Work has been commenced on an addition to the paper box factory of A. E. Lond and Co., Limited, 357 Gerrard Street, Toronto.

Members of the Niagara Peninsula Branch of the Engineering Institute of Canada made a visit of inspection to the works of the Ontario Paper Company at Thorold a few days ago where they were shown the process of making paper. The output in newsprint of the company is 240 tons daily. The Beaver Board Company's plant was also visited.

The Canadian Daily newspaper Association at its annual meeting in Toronto a few days ago elected the following officers: President, P. D. Ross of the Ottawa Journal; Vice-President, J. Burt of the Vancouver Province; Treasurer, George E. Scrogie of the Toronto Mail and Empire.

Messrs. James A. Connors and Edward W. Connors, of the James W. Sewall office, timberland cruisers and forest engineers, Old Town, Maine and Washington, D.C., have begun a systematic land examination of some of their holdings for Williamson & Crombie, Kingsbury, Quebec. This same office is also making a detailed estimate on the lands of McLaehlin Bros. Co., Ltd., of Arnprior, Ontario, Mr. Lewis T. Calhoun being chief of party in this latter work, which is of considerable scope, the lands being situated both in Ontario and Quebec. Mr. W. H. Wentworth, another of Mr. Sewall's chiefs of party, has just completed an examination of a considerable tract for the Sissiboo Pulp & Power Co. of Weymouth, Nova Scotia. Other crews besides the ones mentioned are now out in Quebec, Nova Scotia and Maine. This concern has covered so far in the neighborhood of 1,500,000 acres of land, both in the north, as well as in Tennessee and North Carolina. One piece of work undertaken was the entire land examination of 1920 for the State Assessors of Maine.

In regard to the report recently sent out that John R. Booth was to be included in the pending big merger of Canadian eastern paper and pulp companies by Brit-

ish interests, Mr. Jackson C. Booth informed the Pulp and Paper Magazine that his company was not concerned.

The lowest water in the history of Ottawa lumber, pulpwood operators which has been experienced within the last two decades is now asserting itself at Ottawa, and has resulted in the John R. Booth paper mill being practically shut down. The mill is between four and five thousand tons behind its normal production.

The Canadian press despatch and other newspaper reports to the effect that McGuire, Patterson, and Palmer, had purchased certain limits owned by the Bronson Company, supposed to be situated near Chelsea, Que., was denied by both Messrs. Frank and Fred. Bronson. According to the Bronson Company statement to the correspondent of the Pulp and Paper Magazine at Ottawa, the Bronson Company disposed of its last limits about two years ago.

#### E. H. BRONSON DEAD.

Attended by citizens of all walks of life, including many representatives of the Ottawa lumber, pulp and paper interests, and others, the funeral of Hon. Henry Erskine Bronson was held at Ottawa late last week. With his passing not only the Bronson Company, and the City of Ottawa lost a valued member, but the whole Dominion loses a most respected and representative citizen.

Hon. Erskine Henry Bronson was born at Bolton, in Warren county, New York state, on September 12, 1844. He was a son of the late Henry Franklyn, and Edith Pierce Bronson. His father came to Ottawa first in 1849 and afterwards moved his family here in 1852 and built the first sawmill in the Ottawa Valley, to supply the export trade, which business grew to a point where thousands of men were employed.

On his father's death in 1898 he succeeded to the presidency of the Bronson-Weston Lumber Co. He was one of the inaugurators of the Ottawa Electric Company. He was president of the Bronson Company, water power and manufacturers of ground wood pulp; vice-president of the Ottawa Light, Heat and Power Co.; president of the Ottawa Power Co., and a director of the Ottawa Electric Co., and the Little River Redwood Co., which is at present carrying on extensive lumbering operations in California. He was a member of the Royal Ottawa Golf Club. He was for 47 years an elder in St. Andrew's Church.

#### EWING IN CHARGE OF A. W. P. CO'S NEW YORK OFFICE.

Mr. R. D. W. Ewing has been appointed manager of the American Writing Paper Company's New York Office at 41 Park Row, succeeding Mr. L. F. Hayward, resigned.

Mr. Ewing who has been manager of the company's Bonds, Writings and Ledgers Section at the Holyoke office, will assume his new duties on October 15. His experience, his executive ability, and his knowledge of the paper trade eminently fit him for the important position.

The new head of the New York office acquired practical training in the mills of the A. W. P. Co., and later spent four years as a salesman in the office of which he now has charge. He served as lieutenant for two years in the United States Navy, and on his discharge resumed his duties with the large fine paper manufacturing organization in its Bonds, Writings, and Ledgers section.





# The Markets

## CANADIAN TRADE CONDITIONS

Toronto, Oct. 30.—Conditions remain unchanged in the pulp and paper trade, as compared with the past week or two, with prices in almost every line holding firm and with freer deliveries from the mills in everything except book paper and newsprint. In these two lines there is an insistent demand which the mills have not succeeded so far in catching up with. This does not mean that there is any more paper in any department of the trade than there is a call for. But there are some lines that have been taken out of the shortage class and the jobber is not so persistent in his calls for some of the higher grades. High-priced papers are not selling so readily. For instance the printer now bucks at paying 70c a pound for superfine linen record and his customer is willing to accept the job on cheaper stock. And smaller lots of paper in most lines are being bought. The consumer feels that he is buying at a time when there is very good chance of prices coming down and he is not doing any more stocking up than is necessary. Even at that there is a surprisingly good demand for all paper products and there is no indication in the trade of falling prices. Here and there in the trade one runs across a paper dealer who cannot see how the paper trade can retain its prosperity with tumbling prices in many other commodities but, he admits that the trade is in a class by itself in respect to demand and under-production. It seems to be pretty generally conceded that the market may fall off some during the fall or winter months but no serious slump is looked for in the immediate future and in the meantime mills are not only busy on present orders but are working to capacity in an endeavor to get caught up on arrearages.

### Jobbers Want Quotations.

Practically all through the paper boom and particularly during the past several months the mills have made their shipments at prices prevailing at time of delivery. Jobbers are beginning to get restive under this restriction and claim that the time has come for the mills to set a fast price and bring the market back to normal. "The situation to us, with no basic price to go on has been most unsatisfactory," said a leading Toronto distributor to the Pulp and Paper Magazine. "Naturally our customers want to know what the prevailing price is, and think that it is about time they were given the information. There is a general impression that the mills, if they would, could now abolish the proviso as to sales being made on the basis of the price prevailing at date of shipment and thus assist in bringing the market back to a normal basis. They ought to be in a position now to establish standard values, quote prices accordingly and raise or lower prices when necessary. It certainly would help the trade if this were done and I think all branches of the industry would welcome the change." It was stated that the jobbers would bring the matter before the mills and endeavor to have the change become effective for the fall buying.

**PULP.**—There is still a very pronounced shortage of raw material and there is practically no trading in

either chemical or groundwood pulp. Dealers report that no groundwood pulp is available but a fair market price for it would be from \$140 to \$150. Contract prices for bleached sulphite are \$190 to \$200 and there are no spot lots offering. The same may be said of unbleached which is quoted at from \$175 to \$185. Production of both pulp and newsprint has been considerably reduced within the past week because of low water in the Ottawa River. The mills at Chaudiere are said to be operating far below normal and low water also caused considerable trouble at other mills. It is estimated that the production of paper, newsprint and cardboard was reduced by about two-thirds for a time but the situation is reported to be easing off through rain falls which have come at the head of the Ottawa River. Another factor in the pulp shortage is concerned with the big mill building operations in the north country which have attracted large numbers of lumber jacks from the woods to the centres of building activities.

**NEWSPRINT.** There is still considerable speculation as to what price newsprint is going to bring during the first quarter of the new year, but conservative opinion places it at 7½c as compared with the present average price of 5.35c a pound. It is generally conceded that an increase is coming and that it will be announced very shortly, but as to exactly what it will amount to it is not definitely known. As far as can be learned Canadian newsprint circles do not take seriously the threat of a German invasion of the Canadian and American newsprint fields. The statement was made during the week that large quantities of German newsprint were coming out to the American market and being offered at 6c, or \$120 a ton, which, it was opined would weaken the Canadian newsprint market. In some circles there was a disposition to look upon the story as part of a campaign of propaganda set in motion by certain newspaper proprietors in Chicago and backed up by a bear raid on International Paper and Union Bag. Taking the story at its face value it is pointed out that the German imports would only amount to about 35,000 tons a year, or less than enough to keep a paper like the Toronto Telegram going for twelve months. It is highly improbable that Germany could supply the surplus mentioned in view of the fact that the country's total production is barely more than one half of what it was before the war, as a large portion of its pulpwood supply was cut off when she lost part of Bohemia. The whole thing is viewed in the light of an attempt to influence the level of newsprint prices for the first quarter of 1921.

**WRAPPING AND BAGS.**—Aside from a slight increase in millinery bags the paper bag and wrapping paper branches of the trade were unchanged during the week. As indicating freer shipments from the mills, one jobber stated that his firm were now getting consignments through in two or three weeks time from the date of order whereas heretofore it would take that many months. Paper bag supplies are also easier to get although the demand keeps up fairly well and the jobbers report business as satisfactory.

**RAG AND WASTE PAPER STOCKS.** There has been an easier feeling in new cotton cuttings with a tendency towards lower prices. Some dealers have made slight concessions to mills in order to move stocks, though this has not yet become general. Old cotton rag prices are irregular and the demand is at a minimum. The market is in such a condition that it is impossible to state just what prices really are. Trading between dealers is a thing of the past and orders from consumers for sizeable tonnages are as scarce as the proverbial hen's teeth. Peddlers and small dealers are badly affected and business is almost at a standstill with most of them. This condition has been further aggravated by the continual drop in the lower grades of waste papers. Newspapers slumped off \$5 a ton this week with a like decline in mixed papers. Mills are buying only what they require for actual consumption and are playing a waiting game for additional stock. Prices cannot decline much further without curtailing production altogether. One Toronto dealer is responsible for the statement that with the cost of labor at its present level it will soon be more profitable for producers to burn paper than save it for the collectors. Shavings continue firm, due more to the scarcity of supplies than any additional demand from consumers. Books are moving slowly, with prices unchanged.

Following are quotations on rag and paper stock:

Per Cwt. F.O.B. Toronto

No. 1 shirt cuttings . . . . .	\$23.00—\$24.00
No. 1 unbleached cotton cuttings . . . . .	\$17.50—\$18.00
No. 1 fancy shirt cuttings . . . . .	\$13.00—\$13.50
No. 1 blue overall cuttings . . . . .	\$11.50—\$12.50
Bleached shoe clip . . . . .	\$15.50—\$16.00
White cotton hosiery cuttings . . . . .	\$16.50—\$17.00
Light colored hosiery cuttings . . . . .	\$13.00—\$14.00
New light flannellette cuttings . . . . .	\$14.50—\$15.00
No. 2 white shirt cuttings . . . . .	\$13.50—\$14.00
City thirds and blues (repacked) . . . . .	\$3.75—\$4.00
Flocks and satinettes . . . . .	\$1.40—\$1.50
Tailor rags . . . . .	\$1.35—\$1.45
Gunny bagging . . . . .	\$1.75—\$2.00
Manila rope . . . . .	\$5.25—\$5.50
No. 1 white envelope cuttings . . . . .	\$8.50—\$9.00
No. 1 soft white shavings . . . . .	\$7.50—\$8.00
White blanks . . . . .	\$5.50—\$6.00
Heavy ledger stock . . . . .	\$3.75—\$4.00
No. 1 magazine . . . . .	\$3.00—\$3.10
No. 1 book stock . . . . .	\$2.65—\$2.75
No. 1 manilla cuttings . . . . .	\$5.50—\$5.75
No. 1 print manilla . . . . .	\$2.40—\$2.50
Folded news . . . . .	\$2.00—\$2.25
Over issue, news . . . . .	\$2.50—\$2.75
Kraft . . . . .	\$5.50—\$6.00
No. 1 clean and mixed papers . . . . .	\$1.50—\$1.60

### NEW YORK MARKET.

New York, October 20 — (Special Correspondence).

The decline in box board values, which reached such drastic proportions last week, has continued throughout the current week, and quotations on most grades of board are now on levels denoting a drop of very nearly 50 per cent from the levels obtaining a fortnight ago. Plain chip board is offered by mills down to as low as \$65 a ton at shipping points, while news board is quoted at \$80 a ton f.o.b. mills. Despite the severe decline in prices, demand is developing very slowly,

and the average board mill is sadly in want of business. This condition has become so accentuated in some cases that at least one plant has closed down temporarily, while reports allege that several mills have shut down one or more of their board machines.

Paper boxmakers are doing very little purchasing of board, and, of course, on this hinges the entire board situation at present. The primary fault is that box manufacturers are suffering for want of business themselves, the general dullness affecting nearly all lines acting to diminish demand for paper containers, and naturally these consumers of board are not taking very much supply from mills for the reason that they have no present need for it. Moreover, with prices dropping as rapidly as they are, the average buyer of board would obviously refrain from purchasing as far as possible in anticipation of securing supplies later on at further recessions.

Fortunately, it can be stated that the paper market does not share in the conditions obtaining in the board field. Paper manufacturers are not beginning to get the business with which they were favored up to a short time ago, and the market appears to becoming quieter every day, yet there has been no sharp decline in prices on any kind of paper. Quotations are changing, it is true, and invariably in a downward direction, but papermakers are keeping their composure and are not slashing prices in a vain effort to stimulate buying. Everyone nearly on the paper end contends that prices on the finished product cannot go a whole lot below prevailing levels unless raw material or labor costs come down. There are no indications of this pending, and consequently sellers of paper are mostly pursuing a waiting policy in the firm belief that demand will soon increase and that the market will right itself in due time.

The newsprint situation shows no important change. There is not a very keen spot demand, but the fact remains that most of the supply offered for prompt delivery is finding an outlet among consumers, and at fairly steady prices. Domestic newsprint in standard rolls is fetching around 9.50 cents a pound at mills, and there is little sizable tonnage to be had at less than this price, although occasionally an offer of newsprint imported from Europe at cheaper figures is recorded. The contract basis is maintained at from 6.50 cents upward, and it is definitely known that some publishers of big city newspapers are willingly making contracts for newsprint for delivery next year at as high as 7.50 cents f.o.b. mills. This would certainly indicate that publishers do not look for any material decline in prices.

Book papers hold notably steady. There is little supply of any grade of book paper offered for prompt shipment, and jobbers report having difficulty placing orders for additional tonnages with mills. At the same time, instances have come to light where machine finished and super book papers have been sold in the open market at slight reductions from the prices prevailing not long ago. Coarse papers are quiet and prices incline toward lower levels. With kraft wood pulp on the decline, manufacturers of wrappings are booking some orders at concessions, and quotations on jute wrappings also are moving downward. Tissues are in narrow demand and tending off in value.

A consensus of opinion among paper men is that activity in the market will pick up to a substantial extent during the next couple of weeks. It is commonly felt that the national election out of the way, business



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generally will spruce up, which automatically will lead to heavier consumption and increased demand for paper or nearly every kind. The usual pre-holiday developed and it is believed that this at least is bound to come, and if it does it must arise during the next week or two.

**GROUND WOOD.**—Numerous rumors are heard of cheap lots of ground wood being offered for sale off and on, the prices mentioned ranging down to as low as \$100 a ton, yet investigation among representative members of the trade reveals that there is very little domestic spruce pulp of No. 1 quality to be had at less than \$125 per ton at grinding plants. There seems little doubt that there are sizable amounts of imported mechanical pulp in the market, some of which is wanting a buyer, and it evidently is this pulp that is being offered at the low figures heard talked about. Pulp dealers declare they have to pay from \$120 to \$123 per ton at mills for domestic ground wood of prime grade, and state that consumers therefore can hardly obtain supplies at under \$125. A strong factor in ground wood is the lack of surplus stocks which most producing mills have at this time of the year. Pulp has been moving into consuming channels in consistent fashion in recent months and grinders have been unable to accumulate stocks, and the opinion prevails that when freezing weather sets in and hampers grinding operations, values will certainly undergo enhancement.

**CHEMICAL PULP.**—Aside from kraft pulp, which is easing off under the bearish influence of a lack of demand from board mills, quotations on chemical wood pulps are holding their own. Current demand is rather light, consumers in general confining their buying to supplies actually and immediately needed, yet producers and importers are not pressing customers and are naming steady prices. Sulphite is distinctly hard to locate in sizable quantities for prompt delivery. This applies especially to bleached sulphite, which is quoted at from 12 cents upward for No. 1 domestic and between 13 and 14 cents for bleached sulphite imported from Scandinavia. Soda pulp also is hard to find for spot or future shipment. A local dealer this week told of canvassing the entire trade and of being unsuccessful in locating any available soda pulp. Domestic No. 1 kraft has sold down to 6 cents a pound at pulp mills, while Scandinavian kraft is offered at around 6.50 cents on the dock.

Importations of pulp at New York during the present week included 5,000 bales from Christiania.

**RAGS.** There is a marked lack of trading activity

in papermaking rags. Mills are evincing very little buying interest, apparently having ample supplies on hand to take care of present requirements and not being desirous of augmenting their stocks while prices are on the downtrend, and sales have been recorded at new low price levels. Roofing rags are particularly weak and No. 1 packing is selling at 1.40 to 1.50 cents a pound at shipping points and No. 2 roofing stocks at as low as 1.30 cents. Old whites are notably easier at around 11.50 cents for No. 1 repacked, and old thirds and blues are offered at 3.75 to 4 cents per pound with few takers in sight. New cotton cuttings hold relatively steady in value, due to the comparatively light stocks of such rags in dealers' hands and to the low production by clothing establishments. New white shirt cuttings are a strong item and are readily fetching 26 cents and higher a pound in sales to paper mills.

Imports of rags at this port this week included 983 bales from Antwerp, 223 bales from Manchester, 96 bales from Havre, 139 bales from London, 828 bales from Rouen, 152 bales from Marseilles, 1,010 bales from Alexandria, 316 bales from Barcelona and 536 bales from Genoa.

**PAPER STOCK.**—Waste paper prices continue to decline and business has been done in most grades during the past several days establishing values on new low levels. Demand from box board mills is very close to a standstill, and other consumers are buying solely in hand-to-mouth volume, with the result that with the strike of collectors and sorters in New York over, more old paper is being collected than there is an outlet for. Shavings are about the only class of stock showing steadiness, and dealers are firmly quoting No. 1 hard white shavings at around 9 cents a pound at shipping points and No. 1 soft whites at 8 cents. Folded news is selling at 1.20 to 1.30 cents f.o.b. New York, No. 1 mixed paper at one cent per pound, heavy No. 1 books and magazines at 2.25 cents, and old No. 1 kraft paper at 4.75 cents.

Importations of miscellaneous paper stock at New York this week included 580 bales from Antwerp, 160 bales from London, 130 bales from Dundee, 29 bales from Glasgow, and 25 bales from Liverpool.

**OLD ROPE AND BAGGING.**—Demand for old bagging is almost nil and prices are nominal in the absence of an established market. No. 1 serap bagging is offered at 2.25 cents a pound and less, roofing bagging at a cent per pound and No. 1 gummy at 2.50 cents. Old rope is steady and in moderate call at 6 cents a pound at shipping points for No. 1 manila rope.

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Realizing the development which is bound to take place in trade between Canada and the United Kingdom, the **Industrial & Educational Publishing Co., Limited** will open its own office in England early in January.

Mr. C. H. Armstrong, Jr., who will be in charge, has investigated trade conditions in Canada from coast to coast.

Any advertiser or subscriber who is anxious to make connections as a representative of firms in the United Kingdom, is invited to communicate with Mr. Armstrong, Pulp and Paper Magazine, Gardenvale, P.Q.



*This Service will be*  
**Entirely Without**  
**Remuneration.**

**THE IMPORTANCE OF A GOOD EXAMPLE.**

Example must come from the top, from those who have assumed or who have been given leadership. It is as much a duty in business as in government, in private as in public life, in small as in big things. To take the most obvious instance: Whether we like prohibition or not, it is the law. Whether we resent the loss of our liquor or not, it has been legally taken from us. If we do not like the Volstead Act there is a perfectly proper and lawful way to abate the severity of its provisions. But so long as that law is on the statute books its open and flagrant violation tends not only to breed contempt for this particular law but for all law. And some of the petty offenders against it are the men who, no matter what their personal likes and inclinations, should be the last ones in the community to countenance any lawbreaking.

Unless the boss sets an example we cannot blame the workman for patronizing the bootlegger. If the employer wants sober men on the job, if he wants them to pass up rum in the evening, it is up to him to lay off the old stuff too. Getting his from the bellboy or the club steward does not put him in a different class from that of the lawbreaker who sneaks up a dark alley and hands a dark brother ten dollars for a quart of rotgut. So long as leaders in business, big or little, indulge in any form of law-breaking that happens to suit their palates or their purposes, they have no just cause for complaint when those who look to them for an example indulge in other forms of lawbreaking that hurt the morals and the business of the community. "The best people" are sometimes the worst citizens.

Again, when a man's employees, whether in a retail store or a great business, find that the boss is grabbing thirty, fifty or a hundred per cent profit on a prime necessity of life, what possible reason is there to expect them to refrain from following his example and demanding exorbitant wages? If a concern is putting out adulterated or short-weight goods, by what logic can it expect a full day's work from its men? Instances of bad examples in politics, business and the professions could be multiplied. And though it is by no means true that our laxness is as general as one would gather from a reading of the press that specializes in sensation it is still widespread enough to call for a sharp tightening up all along the line, from the top down.

Loose morality in our social life and our amusements is a natural sequence to a breakdown in leadership. It is a symptom that will disappear with a return to right thinking on the part of those whose duty it is to set an example. When the strong profiteer, the weak grab; when the strong decide that they will not be bound by one distasteful law, the weak decide that they will not obey any distasteful laws; when leaders decide that they are superior to the old conventions and rules, they have plenty of followers who will go their limit one better.—From The Saturday Evening Post.

**The Wisconsin State Board of Health says:**

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"If every man were straight, most of the surgical operations on the female reproductive organs would not be needed."

Men who have had a venereal disease should know they have been cured, not just think so, when about to be married.

# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

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## TABLE OF CONTENTS

### Editorial:

The value of an idea . . . . .	1155
Paper securities are sound . . . . .	1156
Cobwebs . . . . .	1156

### Special Articles:

Benefits and uses of graphic charts . . . . .	1157
Economic utilization of heat and power in paper mills . . . . .	1159
The training of a forester . . . . .	1165

### Miscellaneous Information :

The best friend . . . . .	1156
A paper joke . . . . .	1156
Bank argues industrial immigration . . . . .	1163
Should never have another panic . . . . .	1166
Origin of the word "Shawinigan" . . . . .	1166
Industrial immigration . . . . .	1168
Review of recent literature . . . . .	1170
Phloroglucine as a determinant of wood pulp . . . . .	1171
Pictures by wire . . . . .	1171

Rice straw as raw material for paper . . . . .	1172
The sad tale of ten workmen . . . . .	1176
Immigration facts . . . . .	1178

### News of the Industry:

Index bristols . . . . .	1163
The paper trade in Belgium . . . . .	1164
Built sulphite mill in seven months . . . . .	1164
Invincible Paper and Pulp Corp. agents for Maine Pulp & Paper Co. . . . .	1166
British trade news . . . . .	1167
Ottawa mills need water . . . . .	1168
Foundry at the Soo resumes grinder manufacture . . . . .	1168
United States Notes . . . . .	1169
Pulp and paper news . . . . .	1172
Laurentide to install wireless . . . . .	1172
Japs to build mill in B. C. . . . .	1172

### Markets :

Canadian trade conditions . . . . .	1173
New York markets . . . . .	1174

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THE craftsman of a generation ago is the skilled operative of today. Intensive wants, competition, invention have begotten intensive methods. Everything has changed—everything except the demand for quality. And today quality must unite with economy if the result is to be successful.

Today Canada demands increased production. More goods, an ever-increasing supply—and quality must be maintained with the increase of quantity. The old craftsman often took years to perform the task that the skilled mechanic now accomplishes in a day.

Machinery has done this and today The Canadian Fairbanks-Morse Co Limited are making it possible for the artisan to do the work of the master-craftsman at lightning speed. For quality of product, quality of tools is necessary. The workman does the job, but the machine assures mechanical precision—all those details which insure a product satisfactory in its last analysis.

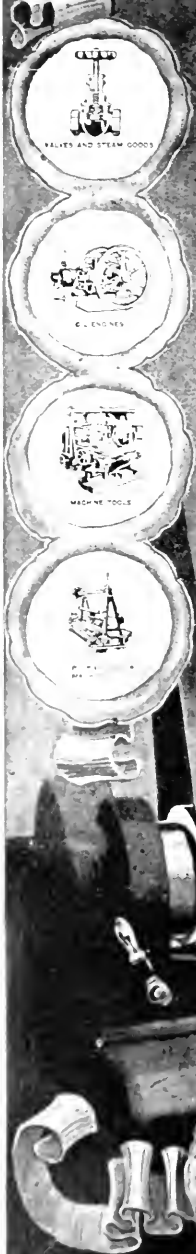
That is why Fairbanks-Morse machine tools should always be specified. There is behind each lathe, grinder, shaper, planer, and so on down to the smallest tool, the dominating spirit of The Canadian Fairbanks-Morse institution, the never-relaxing effort to give 100% quality of produce and service.

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## EDITORIAL



### THE VALUE OF AN IDEA.

We have heard it expressed by workmen in pulp and paper mills, that their efforts to improve on apparatus and processes by thought and suggestion, is seldom, if ever, appreciated and recognized. In some cases we have heard the complaint that a man's ideas have been developed and used greatly to the advantage of his employers, but without any recompense to the man. Many inventors, of course, have suffered discouragement and loss through the want of application of their inventions, and a study of patent office records will show numerous notions which are obviously doomed to oblivion. Many of them are for the sole purpose of serving as dogs in the manger so as to prevent their use by someone else to whose product or process they might possibly be applied. Then, too, there are doubtless cases where ideas are practically stolen.

A very happy incident in the way of inventions, however, recently occurred at the plant of the Abitibi Company at Iroquois Falls, Ontario. In this case the workman saw the possibility of improving the trucks and presses used in the hydraulic pressing of the wet laps of pulp. The Abitibi Company in its desire and effort to make the work in its pulp and paper mill of the greatest interest to the employees in order that they may be happy in their work, has instituted a Suggestion Committee whose duty it is to receive and pass on the suggestions of mill men which would tend to improve on the conditions of the plant and the quantity and quality of product. This committee has been kept fairly busy with the examination of suggestions received from the men. Most of the suggestions are purely local, having to do with the operating conditions of the Abitibi plant. One which had a wider field was that of Mr. T. E. Dowse.

Mr. Dowse observed certain difficulties in the operation of the hydraulic presses. Doubtless many men in the industry have observed the same difficulty and probably swore at it rather than thinking about how it could be improved. This man's practical mind conceived a scheme which looked so feasible and practical to the Suggestion Committee that they, hoping to improve a machine which is widely used in the industry, not only advised the adoption of the suggestion by the mill, but explained the matter to the manufacturer of the press. This company also recognized the value of the idea and sent the thoughtful man a substantial cheque.

We believe that Mr. Dowse was more pleased by the

fact that his idea was appreciated and put to a practical use, than by the receipt of the money although that feature, of course, is an important one. The fact remains that the man who thinks about his work and tries not only to do it as well as possible with the tools at hand, but endeavors to improve upon present conditions, has a sure reward in the pleasure that his work is certain to give him. There are many disappointed ones on such an occasion as the receipt of the cheque by Mr. Dowse, who will say, "Why did I not think of that?" Some such men occasionally feel that they are being ill treated and occasionally a man will make a suggestion to which he has given considerable thought but which does not meet the approval of an impartial committee, or which cannot at the time be made use of. Such men should not be disappointed in not being immediately recognised since thought expended is never wasted if it is of a constructive nature and the more thinking a man does the better he is. A man's brain needs exercise as much as his muscles and once a man begins to have ideas he will find that thoughts come more easily. The pulp and paper industry needs men who think and the man who will make suggestions, even at the risk of having them occasionally turned down, is the man who will make the best progress. It is true that men are usually not born to high position, they attain it by their own efforts. No man need expect promotion who does not have constructive ideas by which it is shown that he deserves it. His ability to conceive and work out practical ideas will be greatly increased by a knowledge of Mathematics and Elementary Science as well as of his particular industry. This knowledge is an indispensable factor in making improvements in equipment and processes. It is as much a tool, and as necessary, as a lathe or forge. Several Canadian pulp and paper companies are giving their employees an opportunity to get this knowledge. They are to be commended, and the men are to be congratulated at having such an opportunity. It is one the editor would have appreciated when he had to attend the Physics class in the local High School every other week after working the night shift from six p.m. to seven a.m. We sometimes wonder if there is sufficient realization and appreciation of the blessings of the eight hour shift.

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The big question across the line, and elsewhere, is, "How soon will the United States join the world's greatest Forward Movement, the League of Nations?"

**PAPER SECURITIES ARE SOUND.**

Under date of October 24th, the Sunday Express of London, prints a dispatch from Montreal, dated October 22nd, in which it is stated under the heading of "Climax of the Paper Boom": "A heavy wave of liquidation is sweeping over the Montreal Stock Exchange. It is due to fears that the paper market must break sooner or later. . . . The market for groundwood and sulphite pulp is already flattened out and the price is declining although the price of newsprint is still keeping fairly steady." The statement goes on further to mention the number of points that some paper stocks had dropped at that date. It is now four weeks since this dispatch was sent to London and while we would not impute an ulterior motive to the correspondent of the Sunday Express, we cannot feel that he was very enthusiastic regarding the future of Canada's pulp and paper industry, nor could he have been very familiar with the fundamental strength and soundness of the foundation on which this industry is based.

The permanence and success of the industry is not based on ticker reports nor the fluctuations of stock prices which are sometimes in great demand and consequently increase simply because the public has a notion that a still higher price could be obtained and therefore rush to buy it. The result of a large immediate demand in every line is almost sure to raise the price; people will pay for a thing what they think it is worth and prices of stocks are not always true indications of the earning power of such securities as an investment. We venture to say that there is not an industrial security bought and sold on the Montreal Stock Exchange, or any similar place, which has a firmer foundation or a more certain prospect of continued prosperity than Canada's pulp and paper industry. We doubt if any of our paper mill stocks at present prices will not return a fair dividend to the investor; some of them have exceptionally good prospects. Unfortunately there are people who persist in gambling with stocks instead of buying them for investment purposes, and the result is sure to be disappointing to somebody and occasionally brings a perfectly legitimate enterprise into temporary disrepute.

Our English friends have no reason to fear for the future of investments in Canada's pulp and paper industry. Let them select wisely and their money is safe.

**CORWEBS.**

Bologna riots? Newspaper headline: "You bet it does!"

Little drops of water  
Little flakes of snow  
When they reach the pulp mill,  
Make the granders go

In a picture of the children's sports at Iroquois Falls, Ontario, we notice an Ernest Hydro among the participants. So there really is an earnest Hydro in Ontario.

Senator Harding, having been elected President of the United States, puts the Republicans once more in charge of the government after eight years of Democratic administration. The Americans can now be certain of the prosperity that was sure to come anyway.

After one of the most remarkable Octobers in history, we are beginning to get a bit of rain. As the song says "Every little bit helps" and every inch of rain that comes before the rivers freeze up, will be a distinct advantage to the producers of groundwood, and the manufacturer requiring this raw material.

Now is the time for everyone to buy, at least, as much as current production requires; as the only way to prevent a serious slump in business is for everyone to contribute as much as possible to keeping business active. If we do not buy other fellow's goods neither he nor his unemployed workers can buy ours.

**"THE BEST FRIEND"**

"After all, a good job is a man's best friend. It keeps him busy and away from mischief. It feeds, clothes and shelters him and his family. It offers him an opportunity to save and thus provide for a rainy day.

"It is better to hold on to a good job, to acquire the habit of industry and thrift and to be able to look calmly to the future than to shift about to seek new jobs every so often, to squander all savings and always live a hand to mouth existence.

"Find a job which suits you, which suits your qualifications and your disposition; a job which you like and which likes you, and stick to it faithfully, studying, learning, advancing. A good job is your best friend."

Nowy Swiat, Polish weekly of Chicago, Ill.

This advice is good for every worker (foreign-born or native-born) who is forming the habit of drifting aimlessly from job to job.

The drifter gets nowhere.

The way to prosperity, usefulness to the nation and finest citizenship is to become a valuable and permanent member of the community where you are profitably employed.

Don't drift. Stay aboard the good ship "Steady Job" and get somewhere!—Inter-Racial Council.

**RESULT OF PAPER SHORTAGE.**

Waiter: "Your bill amounts to 4s. 7<sup>1</sup>/<sub>2</sub>d.

Parson: "How do you make that out? It only comes to 4s. 6d.

Waiter: "You've had two nutton chops at 1s. 6d., each, two threepenny cigars, and one shillings worth of vegetables and . . ."

Parson: "That's all I have had."

Waiter: "And three halfpence for the paper to write the bill on."

# Benefits and Uses of Graphic Charts

By GRELLET N. COLLINS, Dill & Collins Paper Co., Philadelphia.

The idea of using charts to plot curves representing numerical values is a very old one and has been used by technical men for a multitude of purposes. The application of the use of charts and graphic records is likewise a very old practice but there have been different forms of applications which have gone through an evolution that has finally developed some distinct characteristics in the methods used in industrial graphic records.

It is the bane of an executive's existence to have to sit down and intelligently analyze a mass of figures so as to be able to guide and control the mechanism of a large industry. This burden has been dissipated entirely by the use of charts. This great drudgery has been lifted from the executive's shoulders. One of the most important applications of records is in the presentation and analysis of costs.

When reports or statements have to be digested and analyzed, the figures which are an average or normal do not interest the executive as there is nothing unusual about them which needs his attention. If a departmental cost is excessively high or low the figures should be carefully analyzed and followed back to the smallest items. When the costs are high the causes should be determined and steps immediately taken to reduce them before the end of the next period or month. When the costs are abnormally low, the causes should likewise be determined and special effort should be directed toward increasing those influences which tend to lower costs.

If numbers alone are used for executive and control reports, it requires the most careful attention of the reader to take in the meaning of each figure and carry the comparisons in his mind. If these figures are expressed in graphic pictures by means of charts, the tendency of the figures is seen at a glance and the high and low spots are immediately noted. This allows the executive to omit the normal or average figures and he can immediately proceed to analyze the high and low spots to the minutest detail depending on the detail expressed by his records. In other words, the charts increase the executive's efficiency and saves him as well as avoiding the mental drudgery of reading myriads of figures.

## Assistance to Operation.

The usefulness of charts is not limited to the executives alone, however, as they serve a purpose of even more material benefit in the case of the men in an organization who are confused by a mass of figures and who have not the education or mentality to analyze the meaning of the figures which are presented to them. A foreman of a department may be very skillful and be very capable of obtaining excellent results but if properly instructed in the analysis of his departmental figures, he can produce even more astonishing results by knowing where to direct his efforts to the best advantage. For example, if the waste in a department is increasing from week or month to month, a chart will immediately show this tendency while the mere figures would not be as apt to, particularly if the daily differences are slight.

The foremen have been of varying dispositions and their knowledge of their department has been governed

accordingly. Some foremen are able to tell the works' manager, immediately when questioned, what the previous day's production figures were and the waste accompanying the production figures. Others have an idea it was up or down and some are entirely ignorant about items in their departments they should be entirely familiar with. Of course the extent to which a foreman is interested in his work depends to a large extent on the make-up of the individual. An intelligent man will think up means of keeping his own interest alive in his work. Charts may not pump many new ideas into the foreman's reservoir of interest but will enable him to discover with the minimum amount of mental effort the tendencies in his department, for example, whether the percentage of waste is increasing or decreasing.

We now come to the man who is the machine operator or the manual laborer. Why not arouse his interest to a greater extent and portray the figures he is the originator of so he will be able intelligently to comprehend their significance? Refer to "The Creative Workman" by Robert B. Wolf.\* The more facts a man knows about his work the more his interest will be aroused and the natural sequence is greater production of better quality. Here again charts are used which are just as beneficial to the man doing manual labor as they are to the works' manager or plant superintendent. Instead of trying to educate all men to grasp the significance of a myriad of figures just teach them to absorb the graphic picture of figures and observe whether their results produce a line on paper which is pointing upward or downward.

The one point which is an overwhelming argument for the use of charts is the fact that they require less mental effort to analyze than do a mass of figures.

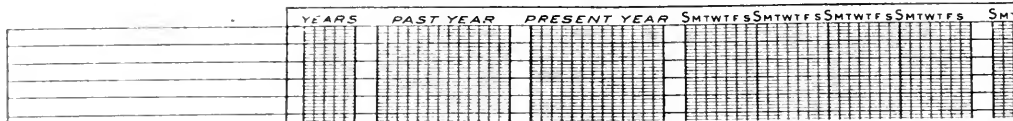
The first Year-By-Day's charts familiar to the writer were drawn up on sections of paper of medium quality and mounted on linen cloth to make the necessary length. They were ruled up in four week periods.

The writer then had some special high grades of linen ledger paper made to order which was 100 per cent linen and very hard sized. These sheets are 56½" x 22" and were ruled and printed, with the dates across the top and bottom of the sheet for each day of the year. The advantages of these charts over the others are: erasures do not destroy the surface; they are one continuous sheet for a whole year; they are ruled on both sides; and most important of all they tie in with a cost account kept on a monthly basis which does not apply to the charts drawn up on four week periods.

A group of members within the Technical Association of the Pulp & Paper Industry, representing ten concerns, then got together and made a chart which is the latest development of Year-By-Day's charts. Special chart paper was made of the same quality as that used by the United States Government, Hydrographic Office. The dimensions of the sheet were kept the same as most of the users had cabinets which have been standardized. A stone was made for lithographing these charts which was an improvement over the ruling and printing. The

\*Obtainable from the Secretary, Technical Association of the Pulp and Paper Industry, 542 Fifth Ave., New York; 25 cent's per copy.

JANUARY



This chart shows year by 4-week periods and summaries for the past and present years by months.

lines and days, being made at one impression, were always completely in register. The new features are a distinct advantage over the previous charts as there are two new divisions added. Adjacent to the column for the title and scales are several columns for the summaries of previous years. Next to this division is a column for the summaries of the current year by months. The subsequent divisions embody the features of the other charts and include a year by days divided into 4 week periods.

**Uses of the Charts.**

It will be well at this point to mention the uses of Year-By-Days charts so that the reader can keep in mind his own application of these charts and formulate ideas applicable to his own work while digesting this article. The following list is by no means the limit of the possibilities of these charts but give an idea of the possible uses:—

- 1. Production records; 2. Routine chemical analyses;
- 3. Costs; 4. Cars moved, loaded or unloaded; 5. Labor turnover; 6. Attendance; 7. Efficiencies; 8. Waste figures; 9. Sales; 10. Weights; 11. Shipments; 12. Materials and stocks ahead of departments.

There are unlimited additional applications which will occur to the user to meet his individual requirements.

**Methods of Plotting Curves.**

The instructions as outlined are not the only ways of accomplishing results but have been put into practice and thoroughly tried. They have been adopted by most of the users of these charts.

The curves are drawn in pairs, one curve on top of the other, down the sheet as far as the different scales and space will permit. Most charts have about 5 pairs of curves to a chart. The first pair are red, the second pair black, etc., alternating.

**The Scale to Use.**

The scale used is entirely optional but curves having certain characteristics are more practical than others. The first thing in deciding what scale to use is to determine the upper and lower limits. The daily or periodic variations should then be plotted for several points and a trial curve drawn. A scale showing too great a variation for a small change will have a jagged appearance which is very undesirable. The other extreme must also be avoided as a curve showing too small a variation for a small change will have more the appearance of straight line.

Considering the first pair of curves, one will be drawn in a solid line and the other super imposed will

be of the same color but dotted. The solid line represents the daily reports as they jump from one point to the next while the dotted line represents the average-to-date lines which originate at the first of the month or period. The solid line shows the daily fluctuations up or down which does not convey much information if the fluctuations are large from day to day. The average to date curve shows at a glance whether the general tendency is up or down and is the indicator of true progress.

There are conditions occurring which cause a lack of records for a variety of reasons. When these conditions arise the methods of plotting indicate at a glance the reasons. When Sundays or holidays occur a very small circle of the same color as the curve is drawn around the point.

If there is a lack of records resulting in non-production caused by fire, flood, strike or some condition which does not occur normally, the daily or solid curve is dropped to zero and the zero is figured in the average to date curve. If the plant is producing but there is a lack of records owing to a clerk's absence on a certain day, the curve is continued to the next point and a circle of opposite color is put on the point representing the day of missing records.

These charts, after being drawn up and the curves plotted, should be shown to all the department foremen and those interested if they are to produce the desired effect. If they are merely plotted and kept in the cabinet they will do no more good than an expensive advertisement which is not properly put before the public.

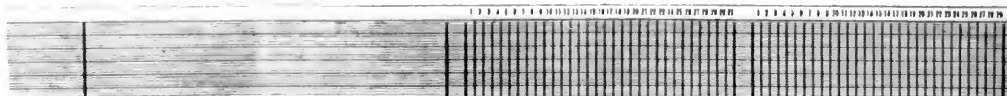
If the results of an organization are put on charts so that they can be quickly comprehended, they cannot be surpassed by any other methods.

Those doubting the value of charts and graphic records need only visit a mill which uses them to be convinced of their results.

NOTE: The Editor was present at a committee meeting in New York when the matter of charts was the principal subject of discussion. The experiences described were so interesting that Mr. Collins was asked to prepare this description. It is understood the the companies who prepared these charts for their own use are willing to give others the benefit of their efforts and experience and will dispose of limited number of charts at \$1 each for orders of 10 or more. The secretary of the committee is G. N. Collins, Richmond and Tioga Sts., Philadelphia, Pa.

JANUARY

FEBRUARY



Part of Chart for curves according to months.

# Economic Utilization of Heat and Power in Paper Mills

By Wm. ADAMSON.

Through our London Representative we publish this interesting paper by Mr. Wm. Adamson, who is a director of Charles Walmsley & Co. Ltd., Bury, England, which he read at a congress of the Technical Section of the British Paper Makers' Association held in Manchester, on October 8th. Mr. Adamson is recognised as an authority on the subject.

One of the most important, and, to many of us, one of the most interesting problems attached to the manufacture of paper is the economic utilization of heat and power in the mill. The time has come when it is very necessary that the source of heat and power, which in England is coal, should be economised to the greatest possible extent. Until recently coal has been so plentiful and so cheap, that the question of its economical use was not very pressing, but in view of the present shortage in supplies, the rising prices and our ever dwindling national reserves, the question becomes one of the greatest importance. If by the most modern plant, under scientific control, we can save even a small amount of coal per ton of paper produced, it is obvious that a considerable economy will be shown at the end of the year, and, of course, a reduced consumption of coal means diminished charges for handling both coal and ashes. The fuel cost per ton of paper produced is one over which the paper-maker has more control than he has over the other main costs of paper production, such as raw material and labor.

A very short time ago a census was taken of the coal consumptions of the different mills, and at that time the following results were considered as good practice:—

Table 1.

Paper.	Coal Consumption News.—25% Chem., 75% Mech. Wood . . . 18-20 cwt. Cheap Printings.—50% Chem., 50% Mech.
Wood, unbleached . . . . .	26-28 cwt. Printings.—All bleached.
(Free from Mechanical Wood) . . . . .	37 cwt. Esparto Papers. Pure . . . . . 3.5-4 tons Esparto Papers.—50% Esparto, 50% . . . . .
Chemical Wood . . . . .	2.5-3 tons. Writings.—100% Rag, . . . . . 2.5-5 tons. Writings.—50% Rag, 50% Chemical Wood . . . . . 2.5 tons.

There are few mills, however, that reach this standard, but there is no doubt that with modern plant, lightly installed these results could be not only reached, but surpassed. A more correct way of comparing consumptions would have been on a B. T. U. basis, or from the commercial point of view, on an "C.s.d." basis, as the heat value of coals and the cost of same vary considerably. Fuel is wasted in most mills by inefficient boiler plant; by uneconomical steam plant; by unnecessary absorption of power in driving the plant; and by dissipation of heat in various parts of the mill.

## Use of Heat in the Mill.

Heat is utilized in the mill for various operations:—

(1) As an aid to the chemical disintegration of the

fibrous raw material for the extraction of cellulose; (2) For the recovery of the active agents used in this chemical disintegration, e.g., the recovery of soda from the waste liquors in the digestion of grass, etc.; (3) For drying the web of paper after formation on the machine; (4) To warm the air used for absorbing the moisture evaporated from the paper during the drying; (5) As the source of the mechanical and electrical power by which the paper-making plant is driven (except where water power is used); (6) For various other operations, e.g., to accelerate hypochlorite bleaching; to "free" the paper stock, so that it may more readily part with its water on the machine wire, to warm the mill buildings, etc., etc.

The most suitable agent for distributing this heat is steam, principally owing to its large heat carrying capacity at convenient temperatures, and to its property (change of state) of being able to part with greater portion of this heat (latent heat at constant temperature. These two properties of steam are of the greatest importance, when used for cases 1, 2, 3 and 4. The heat carrying capacity of steam, or "total heat" varies very little with the pressure, the values at the higher pressures being only slightly greater than at the lower pressures. The "latent" heat also varies very little with the pressure, but is slightly greater at the latter than at the higher pressures.

**STEAM FOR DIGESTIVE PURPOSES.** When steam is used to aid the digestion of rags, grasses, wood and other fibrous materials, temperature, pressure and latent heat are very important factors for successful operation. In practice the most suitable temperatures and pressures have been fairly well determined for the different raw materials and usually lie within definite limits for each material, boiling agent and desired product. To obtain these temperatures, steam is used either "directly" or "indirectly" in the digester. The advantages and disadvantages of both methods are fairly well known, but in either case the steam must supply the necessary heat to bring up the contents of the digester to the required temperature and pressure. Live steam is generally used for digestive purposes, but for low temperature boiling (e.g., rag boiling), exhaust steam could be more economically used. Even in the case of the higher temperature digestion, low pressure exhaust steam could conveniently, and with great economy, be used as a preliminary, and the final temperature attained by the use of either higher pressure exhaust, or live steam. Thus, for example, if the final digestion temperature be 300 deg. Fah., and the initial temperature of the digester contents be 60 deg. Fah., then exhaust steam at 10 lbs. gauge pressure would be able to supply almost 75 p.c. of the total heat required for the digestion.

**STEAM FOR HEATING THE DRYING CYLINDERS.**—To dry paper satisfactorily, the steam supplied to the dryers should lie within certain limits of temperature. If the steam is at too high a temperature, there is always the great risk of "cockling" and burning the paper; whereas, on the other hand, the temperature must not be too low, or the rate of drying will be considerably retarded. The usual range of tem-

peratures corresponds to absolute pressures of from 15 to 25 lbs. per square inch, but for some classes of paper, pressures up to 45 lbs. are used. Another factor affecting the rate of drying is the presence in the exhaust steam of oil. This is ultimately deposited as a film on the inner surface of the cylinder wall, and will greatly retard the rate of heat flow from the steam to the paper. To compensate for this, higher temperature steam is required than is necessary when exhaust steam free from oil is used.

**HEAT AVAILABLE FOR DRYING IN EXHAUST STEAM.**—When steam has done useful work either in a steam engine or steam turbine, and been exhausted at a lower pressure, the heat converted into work is only a very small percentage of the total heat in the steam, so that in this exhaust steam there is a large amount of heat than can be used for drying purposes. Suppose for example, we take 1 lb. dry steam at an absolute pressure of 200 lbs. per square inch. (185 lbs. per square inch gauge pressure). If this is expanded adiabatically (i.e., at constant temperature)—say in an ideal engine—and exhausted from the engine or turbine at an absolute pressure of 25 lbs. per square inch (10 lbs. gauge), the heat units converted into work would be 155 B.T.U. If this steam be then passed into the drying cylinders of the paper machine, and discharged therefrom as water—say at a temperature of 240 deg. F.—the heat units available for drying will be 834 B.T.U. If, however, instead of using exhaust steam, live steam be used reduced to the lower pressure by means of a reducing valve, then passed into the drying cylinders of the machine, and exhausted therefrom as water at the same temperature, the heat units available for drying would be 989 B.T.U. A comparison of these figures will show that steam which has done useful work in the engine has almost as much heat available for drying as there is in the live steam. It is interesting to go further with this, by making a comparison of the value of steam used in the following ways:—

(1) 1 lb. of dry steam, expanded in an ideal engine from an absolute pressure of 200 lbs. per square inch to 25 lbs. per square inch absolute.

Heat Units available for work . . . . . 155 B. T. U.

This steam is then passed into the drying cylinders and discharged therefrom as water at a temperature of 240 deg. F.

Heat Units available for drying . . . . . 834 B. T. U.

(2) 1 lb. of dry steam expanded in an ideal engine from an absolute pressure of 200 lbs. per square inch to a condenser pressure of 28" vacuum.

Heat Units available for work . . . . . 336 B. T. U.

(3) 1 lb. of dry steam is reduced by means of a reducing valve from an absolute pressure of 200 lbs. per square inch to 25 lbs. per square inch, (absolute pressure), and is then used for heating the drying cylinders.

Heat Units available for drying . . . . . 989 B. T. U.

From these results it will be readily seen that 1 lb. of steam used under the condition (1) is equivalent to 130 lbs. of steam used under conditions (2) and (3). Similar results will be obtained with steam at other initial pressures, and also in the case of superheated steam, only in the latter case, more heat is available per lb. of steam both for work and for heating. These results demonstrate the great economy of using exhaust steam for drying in preference to fresh live steam.

**SUPERHEATED STEAM AND PAPER DRYING.**

Superheated steam has been suggested for drying

paper, but there are many objections to its use. For instance, its heat carrying capacity is very little greater than that of saturated steam, unless the temperature be unreasonably high, e.g., saturated steam at 10 lbs. gauge pressure contains a total heat of 1155 B.T.U. at a temperature of 240 deg. F., and superheated steam at the same pressure and a temperature of 300 deg. F. (beyond which it is inadvisable to go) contains a total heat of 1184 B.T.U.—only 29 more than the saturated steam. Again, if superheated steam were passed into the drying cylinders, it would probably cause the overheating of the end of the dryer, and thereby damage the paper; and as soon as it came into contact with the water, its superheat would immediately be lost. Also, if the dryer could be filled with superheated steam, it would be unable to give up any of its heat without a lowering of temperature, and this lowering would take place until the steam became saturated. As previously stated, for successful drying, the temperature of the steam within the drying cylinders should remain constant. Another point against the use of superheated steam, especially in the case of the exhaust steam from reciprocating engines, is that with the usual type of oil separator, it is impossible to remove the bulk of the oil contained in the steam. In the case of steam by-passed from a "bleeder" turbine, however, there is no trouble experienced on this account, as it does not contain any oil, and if it be superheated at all, the degree of superheat should be only enough to ensure dry steam at the furthest point in the heating mains. If live steam, which is already superheated, be reduced in pressure by a reducing valve, it will at a lower pressure be further superheated, and before this is used as a "make-up" for heating the drying cylinders, means should be adopted to reduce its temperature.

**STEAM USED FOR GENERATION OF POWER.**—

The very property of steam, i.e., its large latent heat capacity—which is so useful when steam is used as a drying agent—has nothing like the same value when it is used for power purposes. The value of steam for power purposes depends mainly on the range of pressure and temperature that can be worked, and very little on the total heat of the steam. Thus, if steam be used in the most economical engine, or turbine, there is always a large percentage of heat in the steam passed over to the condenser. Greater economy in steam consumption can be obtained by adopting higher initial steam pressure with further adoption of higher superheat, combined, of course, at the other end of the scale with the most perfect condensing arrangements. It is very common now to install plant with gauge pressures of 200 to 250 lbs. per square inch, superheated to a total temperature of 600 deg. F., and to work this expansively in the case of turbines to a vacuum of 28½" to 29" with the barometer standing at 30." It is interesting to examine the available energy in heat units that can be obtained in an ideal engine with steam at different initial and condenser pressures. From the total heat entropy curves for steam at different pressures and superheat, the heat drop by expanding steam in an engine working on the "Rankine" Cycle with adiabatic expansion, can be readily determined. In practice, however, no steam engine or turbine is capable of converting the same amount of heat into work as is shown for the ideal engine.

**SUPERHEATED STEAM FOR POWER PURPOSES.**

—Superheated steam, although of little value for heating and drying, is, however, of considerable value in the generation of power. If the steam supplied to an

engine be superheated to only a small extent, so as to ensure its being dry at the engine, then for every 10 deg. F., of added temperature, there will be a reduction in steam consumption of not less than 1 p.c. Thus, with 100 deg. F. of superheat at the engine, a reduction in steam consumption of about 10 p.c. can be obtained, as compared with dry steam. Superheated steam used in the steam turbine also shows a marked decrease in steam consumption over dry steam. For example, 100 deg. F., of superheat reduces the steam consumption by 8.5 p.c., as compared with dry steam. For reciprocating engines, superheated steam as high in temperature as 500 to 550 deg. F., can be safely used and will show considerable economy and smoother working of the engine; for turbines, temperatures as high as 600 deg. F. are now in common use. The steam supplied to the engines driving the paper machines should only be superheated to a temperature which will ensure dry steam in the exhaust pipe. In order to avoid excessive wear of the cylinder, piston rings, valve rings and packings, when using superheated steam in the engines, it is very necessary to increase the supply of oil for internal lubrication.

**CHOICE OF POWER UNIT.**—The paper mill can be driven in many different ways, and by the use of power units of various types. In the case of existing mills, the "layout" of the plant generally determines the method of driving and the most suitable type of unit, but in the case of new mills the plant can be arranged in the most convenient way to suit the class of paper being manufactured, and the method of driving arranged accordingly. In determining the most suitable type of power unit, the first essential is to make a correct estimation of the power and heat requirements of the mill. If the heating load exceeds the power load then the thermal efficiency of the engines is of little importance, but if on the other hand the power load predominates, the thermal efficiency of the power units is of the greatest importance. The economy of engines, or turbines, in regard to steam consumption per unit of power will always be a most important factor in determining the relative value of different types of engines and turbines, and their application in mill driving. Apart from the steam consumption, loss through stoppages; cost of maintenance, attendance repairs and depreciation; and the initial cost, have all to be considered in estimating the real commercial economy. Reliability and efficiency are the most important factors, and should not be sacrificed in order to save a little in initial cost of the plant. In fact, reliability should come first of all in any power scheme for paper mill driving, ranking of more importance than steam economy. The loss of production by unreliable plant would soon counterbalance any saving in steam economy or initial cost.

**STEAM ENGINE AS POWER UNIT.**—The steam engine in one of its many different types has been universally employed as the power unit in steam-driven paper mills. The choice of type as main power unit has varied greatly, depending in some measure on the space at disposal in which the engine was to be fixed, and also on the speed of rotation. Where floor space was limited and the height permitted, the vertical type was the only alternative; but when the space was not limited, the horizontal slow speed type was generally preferred, being the more convenient of access; and as it occupied a larger floor area, the engine was more likely to be free from vibration. The economic use of the steam in the engine depends mainly on the ratio

of expansion, the leakage past the pistons, valves and packings, and on the quality of the steam supplied. With regard to the ratio of expansion, it is possible to carry this too far in condensing engines, necessitating the use of very large cylinders; and beyond a certain point—while showing an improved result per I.H.P.—this does not show an improved result per B.H.P. The mechanical efficiency of engines varies according to the type. Slow speed horizontal engines will show an efficiency of only 80 to 85 p.c., whereas the quick revolution engines with forced lubrication will show an efficiency up to 92 or 93 p.c. The highest efficiency of any engine is at the full rated load, as the power required to drive the engine remains practically constant at different loads.

**STEAM TURBINE AS POWER UNIT.**—Within the last few years the steam turbine has become a very serious competitor of the reciprocating steam engine as the main power generating unit for paper mill driving. Two types of turbine readily lend themselves to paper mill service, viz.—(1) The "Extraction" type and (2) the "Mixed Pressure" type. The former, sometimes known as the "pass-out" or "bleeder" type, is arranged so that the steam, after passing through one or more stages of the turbine, can be by-passed at suitable pressures into the heating mains for heating purposes in the mill, and so that the excess steam can be passed through the lower stages of the turbine to the condenser, in those cases where the power load is greater than the heating load. This type of turbine can thus work as a high pressure machine, if no steam is wanted for heating; or as a back pressure machine, if all the steam necessary for power production is wanted for heating. The amount of heating steam can consequently fluctuate between these limits. When working as a back-pressure turbine, there is always a small quantity of steam passed through to the condenser so as to keep a slight steam flow and eliminate troubles that arise when working in a vacuum. The steam by-passed into the heating mains can be readily controlled by a suitable valve operated by the governor gear of the turbine. When the heating or power requirements of the mill fluctuate, they are readily and almost instantaneously accommodated by the sensitive governing gear on the turbine. Thus, with constant load, if more steam is required for heating, it is automatically supplied by the governing gear admitting more live steam to the first stage of the turbine, and allowing less steam to pass through to the condenser. On the other hand, if the demand for heating steam is reduced some of the live steam is automatically cut off, and more steam passes through the lower stages to the condenser. Again, if the demand for heating steam remains constant, but the power load varies, the governor gear automatically controls the steam supply to the turbine and through the lower stages to the condenser. The steam can be by-passed at a fixed pressure, and this pressure maintained constant irrespective of the steam demand for heating, or the fluctuating power demand. When this pressure has been fixed, the design of the turbine does not very readily permit of its being altered without a sacrifice in steam economy, but if the pressure of the heating steam be fixed at the maximum that will be required in the mill, it can readily be adjusted by means of a throttle valve for the lower pressure requirements. This is the ideal condition for the supply of heating steam to the mill, and moreover, this steam being free from oil, can be

admirably used for the digesters, drying cylinders, hot air plant, or for any other heating requirements of the mill. Such an arrangement of "by-passed" steam permits of great economy, as the steam for heating purposes has already given up a portion of its energy in the turbine previous to its entering the heating main. This steam for the same pressure drop does not give out as much energy as is the case of steam used under the same conditions in a reciprocating steam engine, and this is one of the objections urged against the use of the turbine. However, having given up less heat in the form of energy than the steam from a reciprocating engine, it contains more heat available for drying. A well designed reciprocating compound engine working down to about atmospheric pressure is a more efficient machine than a turbine working under the same initial and terminal pressures; but between the atmospheric and condenser pressures the turbine is far more economical, as it is able to expand the steam down to an absolute pressure of less than 1 lb. per square inch, while the reciprocating engine working condensing does not expand to much below an absolute pressure of 8 lbs. per square inch. In order to expand to lower pressures, the low pressure cylinder would have to be inordinately large, and therefore, costly while the increased loss from cylinder condensation and radiation would more than counterbalance the gain due to a greater expansion. For example, in most condensing engines the saving over non-condensing conditions does not exceed 25 p.c. to 30 p.c. under the most favorable conditions of load, and on over-loads the saving by condensing is much smaller. From this it appears that a combination of an engine and a turbine will give higher economy than either an engine or a turbine working through the whole range of pressure. This leads us to the mixed pressure type of turbine, that can be readily used for paper mill driving.

**MIXED PRESSURE TURBINE.**—The mixed pressure turbine can be employed in conjunction with reciprocating, non-condensing engines. The engines could be used for driving the machine, the beater shafting, etc., and being compounded, would absorb the greatest possible amount of power from the steam before it is exhausted into the heating mains. The excess exhaust steam that would result from the use of these engines could then be used in the mixed pressure turbine for the generation of the electrical energy for the electrical load of the mill. In those mills where the power load exceeds the heating load, this is often the most economical method of driving as regards steam consumption, since the steam available for driving has been used through reciprocating compound engines, and the excess passed over to be taken full advantage of in the mixed pressure turbine. Any additional steam required for the electrical load is automatically provided by the governor and valve gear of the mixed pressure turbine. In many mills where the main power unit is a compound condensing engine, a mixed pressure turbine could be applied with considerable success. By working the engine non condensing and passing the steam into the turbine, the power output by the combination might be increased 30 to 50 p.c. without any increase in the fuel consumption. This is especially so in those cases where the engine is working under over load conditions. This combination is one of the most attractive methods of increasing the steam efficiency of an existing mill, as the exhaust steam from the engine could be used as a "make-up" supply for the heating mains and the ex-

cess passed into the turbine.

**EFFICIENCY OF THE TURBINE.**—The efficiency ratio of a turbine is closely connected with the size. Within the last few years great improvements have been made in the design of the turbine, and turbines are now built with efficiencies as high as 75 p.c. for very large outputs, but for lower powers the efficiency is not so good. Turbines of 1,000 K.W. and over show efficiencies up to an even higher than 66 p.c. Low pressure or mixed pressure turbines, working between 16 lbs. per square inch absolute with dry steam and 27" to 28" vacuum show a higher efficiency ratio—for machines of moderate output the figure runs from 68 to 70 p.c. at full load condition. (The efficiency ratio of a turbine is the ratio of the heat actually transformed into mechanical work to the heat available for mechanical work by the adiabatic expansion of the steam from the higher to the lower pressures.) The mechanical efficiency of the turbine is generally as high as 95 p.c. and sometimes higher. Generally speaking, below an output of about 500 K.W., a reciprocating condensing engine driven generator is more economical in steam consumption and less costly than a turbine driven generator, but above this output the turbo unit has the advantage.

**UNIFLOW ENGINE.**—The "Uniflow" engine has been applied to paper mill driving with considerable success, particularly for driving the beater shafting, either directly connected or through ropes. The development in the application of the uniflow engine principle for paper mill driving has been the introduction of a compound extraction type engine, having a high pressure cylinder for expanding the steam down to the low pressure required in the heating mains, and a low pressure cylinder on the "Uniflow" purposes, and expanding this to the fullest extent of the condenser pressure. The steam required for heating purposes is thus taken from the receiver between the two cylinders, and the balance of steam is passed on to the low pressure or "Uniflow" cylinder. If the demand for heating steam increases, a momentary reduction of pressure is caused in the receiver, and immediately the "Uniflow" cylinder valve gear comes into action, cutting off the steam supply to this cylinder and simultaneously the speed governor increases the "cut-off" in the high pressure cylinder and more steam is admitted. A reverse operation occurs when the heating steam demand is reduced, and a similar automatic adjustment of the steam supply takes place when the power load increases or decreases. This extraction type compound "uniflow" engine, therefore, in common with the ordinary compound engine, is able to abstract from the heating steam the greatest amount of heat as work for a certain drop in pressure, and it is also able to supply the exhaust steam necessary for heating purposes. In addition, the excess steam can be expanded to a far greater degree in the "Uniflow" cylinder than is possible in the low pressure cylinder of an ordinary compound condensing engine.

**STEAM ENGINE DRIVES FOR PAPER MACHINES.**—Paper machines are now almost universally driven in two main sections: (a) the constant speed portion, which includes the machine stuff chests, stuff, back water, vacuum and sheet pumps, with shake apparatus and strainers; and (b) the variable speed portion, which comprises the body of the machine from the breast roll to the reel. As machines vary considerably in size and speed, depending on the class of paper



being made, many points have to be taken into consideration before fixing the most suitable type of driving engine or motor. The most common practice has been to arrange for the constant speed portion of the machine to be driven by a constant speed engine, generally of the totally-enclosed, inverted vertical, simple expansion type; and the variable speed portion to be driven by a similar type of engine, arranged with a speed variation device, so that the paper machine may be run at varying speeds to suit the substance being made. Both these engines are of the back-pressure type, exhausting into a main manifold pipe, which feeds the drying cylinders with the heating steam. The usual range of back pressure for these engines ranges from 2 or 3 pounds up to 20 lbs., and sometimes even as high as 30 lbs. per square inch gauge. Up to a few years ago, the boiler steam pressures in paper mills did not exceed 100 to 120 lbs. per square inch, and with a back pressure of say 10 lbs. per square inch in the exhaust pipe, the simple expansion engine was, and is, the most serviceable type. Of recent years, however, paper mill steam plants have been renewed and the tendency has been to install steam boilers to work at higher pressures; and many mills today are putting in plant for pressures as high as 20 lbs. per square inch. With these higher steam pressures, compound engines on the machines are worthy of consideration, being more economical in steam consumption. Generally speaking, however, these compound engines do not pass enough steam for drying purposes, and the exhaust has to be supplemented. If it can be supplemented by exhaust steam drawn from some other source — say from the main mill engine or turbine, then it is decided economy to install compound engines, provided, of course, that the initial steam pressure permits of compounding. If, however, live steam would have to be used as a "make-up", it is advisable to retain the simple expansion engines. Another factor must be taken into consideration with regard to the use of steam engines, viz: — the variable amount of exhaust steam. The power required to drive the constant speed portion of the machine varies very little, being practically independent of the speed of the machine; but the power for driving the variable speed portion varies almost directly as the speed of the machine. For instance, when the machine is making heavy substances, its speed is low, and generally speaking, the power required to drive it is also low, consequently, the amount of exhaust steam passed is relatively low; while when light weight substances are being made, the speed of the machine is considerably increased, and the power taken to drive the machine is proportionately increased, with a consequent increase in the amount of exhaust steam passed. Now, the steam required for drying remains practically constant and independent of the speed of the machine, as the output of paper from the machine varies very little between the lowest and highest speeds. Therefore, with simple expansion steam engine drives, we either get on the one hand, too little steam for drying purposes, or too much — there being only one position of equilibrium, where the steam passed by the engines is equal to the amount required for drying. This position is rarely attained, and generally a "make-up" supply of live steam is blown away to atmosphere when running at the higher speeds. From an economical point of view, both practices are bad, and the ideal scheme would be to be able to draw on a constant amount of exhaust steam for drying purposes in

the former case, and to find a use for the excess exhaust steam in the latter case.

**INTERNAL LUBRICATION OF STEAM ENGINES.**—The oil used for the internal lubrication of the engines is carried over into the heating mains by the exhaust steam, and should be removed by some efficient type of oil separator, before it is allowed to pass into the drying cylinders. It is possible, but not generally advisable, to dispense with internal oil lubrication. For instance, graphite can be used where the wearing surfaces are soft and porous, as it fills up the pores and acts as an efficient lubricating medium, but it is less successful where these surfaces are of hard, close grained cast iron. Bronze piston and valve rings may be employed, especially when using saturated steam, but this means increased steam consumption, due mainly to leakage of steam past the valve and piston, owing to the absence of the seal ordinarily produced by the oil film. Even then it is necessary to fit oil flush taps for service in starting up after the week-end stoppage.

(To be continued.—Distribution of Power, etc.)

### INDEX BRISTOLS.

The following trade customs have been effective since July 1, 1920, and have also had the approval of the majority of the Card Index System manufacturers in the United States:

1. Sealed in packages of 100 sheets for all sizes not larger than 25<sup>1</sup>/<sub>2</sub>x30<sup>1</sup>/<sub>2</sub> inches
2. Priced per pound.
3. The Trade Customs Stock Sizes are:  
20<sup>1</sup>/<sub>2</sub>x24<sup>1</sup>/<sub>2</sub>      22<sup>1</sup>/<sub>2</sub>x28<sup>1</sup>/<sub>2</sub>      25<sup>1</sup>/<sub>2</sub>x30<sup>1</sup>/<sub>2</sub>

Any order other than in a stock size must be for not less than one ton in an equivalent weight and regular color.

4. Weights: Index Bristols are made in the following weight bases:

- 25<sup>1</sup>/<sub>2</sub>x30<sup>1</sup>/<sub>2</sub>—110, 140, 170, 220 lb. 500 sheet count.
- 20<sup>1</sup>/<sub>2</sub>x24<sup>1</sup>/<sub>2</sub>— 72, 91, 111, 143 lb. 500 sheet count.
- 22<sup>1</sup>/<sub>2</sub>x28<sup>1</sup>/<sub>2</sub>— 91, 115, 140, 181 lb. 500 sheet count.

5. The variation of 5% in weight constitutes a good delivery. Standard stock sizes are billed at nominal weight.

6. Special weights lighter than 25<sup>1</sup>/<sub>2</sub>x30<sup>1</sup>/<sub>2</sub>—110 lb. 500, base weight, and all intermediate special weights carry the same ream price as the next heavier base weight, and are not made in lots of less than three tons.

For lots of 25,000 lb. or more of one basis of weight, this rule does not apply.

These Trade Customs have been adopted by

The Pulp and Paper Board Specialties Association.  
The National Paper Trade Association.

The Writing Paper Manufacturers Association.

Certain of the mills, however, do not stock all the authorized stock sizes and weights.

### BANK ARGUES INDUSTRIAL IMMIGRATION.

The reasons why American manufacturers are establishing plants in Canada at the rate of one a week, are summarized in a booklet just issued by the Union Bank of Canada entitled: "A Canadian Plant—Why?" In the face of the growing strength of the "Made-in-Canada" movement and the extension of the British Preferential Tariff, Canada, the booklet claims, is the logical location for a plant with which to handle British and Canadian trade. The argument is good but we question some of the figures in the table of comparative rates for electric power.

THE PAPER TRADE IN BELGIUM.

(By Special Correspondence)

Belgium, Oct. 11, 1920 -- The paper market is still very quiet. Orders are scarce and are only placed to cover immediate needs. Most of the mills are running at reduced output by shutting down machines or by working only five and less days a week.

Prospects seem to be somewhat better for the export trade, especially for the better classes of printings and specialties.

A German consortium, whose headquarters are established at Cologne, is overflowing the country with offers of all grades of paper, at prices which, compared with the current prices, are exceedingly low. Ledger is being offered at 16 marks, printing at 4.5 mk., ordinary wrapping at 3.4 mk., which at the present rate of exchange of the mark, represent respectively 3.70 fr., 0.92-1.15 fr., 0.70-1.00 fr. per kg.

As nearly all the paper houses are disposing of a more or less expensive stock of paper, the situation created by this unexpected invasion is causing much alarm. However, mills do not show any inclination to reduce the present prices. Varying from 2.80 fr.-3.20 fr. for ordinary papers, to 5, 6 and 8 fr. per kg, for the better and the best classes, these prices are now ten times higher than before the war.

It cannot be denied, however, that considering the dependency of the Belgian paper mills of the foreign markets for all their raw materials excepted for coal, their present position, owing to the more and more defavorable rate of exchange and the high freight, is not a favorable one, and that as long as they will have to pay for their coal 125 fr. a ton, bleached and unbleached sulphite 460 and 270 fr. per 100 kg., mechanical pulp 185 fr., rosin 225 fr., it will be very difficult to meet the present foreign competition.

BUILT SULPHITE MILL IN SEVEN MONTHS.

The new sulphite mill of the Consolidated Water Power and Paper Co., at Wisconsin Rapids, Wis., has been erected in seven months and is a record which will probably stand in the paper industry as a record for speed in building operations for many years to come. The building is absolutely fireproof being of brick, tile, concrete and steel construction throughout. It is connected by tunnel with the new wood room and with the mill proper by another tunnel. The new wood room is one hundred and eighty feet in length and seventy feet wide and is equipped with the most modern devices for barking and conveying the wood to the chippers, handling all the hemlock wood for the chippers to be used in the sulphite mill in one eight hour tour and the other eight hour tour will be used for the barking and sawing of spruce for the grinders. The capacity of the wood room is 130 cords of wood each eight hours. It will be in operation only two tours daily.

Special attention has been paid to the housing of all shafting, belts, etc., in such a way as to prevent injury.

No Accidents.

One significant fact is that in the speeding up of construction of the work on the new sulphite and other parts of the mill, not one serious accident has occurred, much credit being due to the work of C. K. Boyer, safety man for the company who has worked unceasingly against accidents and removed causes for accidents on the job.

There were no labor troubles or disturbances, all men co-operating with the superintendents and the foremen in getting the work done quickly and efficiently.

A. E. Millington, who has had complete charge of the construction and installation of the equipment for the mill was given special mention by the officials for his untiring efforts and splendid work. Mr. Millington was, for several years, manager of the Whalen Mill at Swanson Bay, B.C.

Kraske Superintendent.

William Kraske, well known young local man is the superintendent of the new sulphite mill. Mr. Kraske is experienced in the sulphite work having been employed prior to the war at the Nekoosa-Edwards paper company. He entered the service and went overseas and upon his return entered the employ of the Jensen company in New York, makers of the Jensen acid towers used in the mill

Pulp and Paper Imports and Exports of Belgium for the first eight months of 1920, as compared with the corresponding months of the previous year.

Table with columns: Origin, Wood Pulp, Wall Paper, Newspaper, Board, Non-Denominated Paper. Rows include various countries like Canada, Belgium, France, Germany, etc.

Reconciliation.

Table with columns: Wood Pulp, Wall Paper, Newspaper, Paper, Non-Denominated Paper. Rows include totals for 1919 and 1920.

# The Training of a Forester

By Dr. C. D. Howe,

Acting Dean, Faculty of Forestry,  
University of Toronto

The Pulp and Paper Magazine has constantly preached the need for better educated men in the mill. Perhaps we have over emphasized that need in comparison with the need for more intelligence in the forest. Canada's industry and welfare call for both. We are glad Dr. Howe wrote the following article for the Canadian Forestry Journal. It is important to every pulp and paper mill to begin intelligently in the forest.

The education of a forestry student centres upon and revolves about a living tree, since the chief object of the forestry profession is the production of trees for utilization by the various wood-using industries. So long as nature unaided produces trees in quality fit for the manufacturing arts, in quantity as great as that used by lumbermen and destroyed by disease, fire and wind; there is no economic necessity for creating trained brain power to be applied to the production of trees in order to supply the manufacturing industries. Such need develops slowly, and is dependent upon many economic and is industrial factors. The realization of the need comes even more slowly, for public opinion is lethargic, often insensible to the solution of problems whose effects lie beyond the present, and the making of trees for pulpwood spans one generation, and the production of good saw logs spans two generations of men. Of necessity foresters have been more propagandists than foresters in the strict interpretation of the word. After thirty years of unremitting toil the tide is beginning to turn in their favor. The oft-repeated statements that over one-half the commercially forested area of Canada, about 1,000,000 square miles, has been burned, and that forest destruction by fire still continues practically unabated, except in wet seasons, in some of the most valuable forest regions in the country, are bearing fruit, and the significance of such facts in relation to the future prosperity of Canada is beginning to penetrate the public consciousness. In order to maintain at reasonable cost continuous supplies of wood for the industries, forestry should begin with forests which nature has made and not with deserts that man has made. It is both illogical and expensive to destroy and build anew after many years what might have been kept continuously productive under intelligent direction. It must be admitted, however, that recent events such as the soaring prices of lumber and newsprint, the disclosures of callous indifference to the just dues of the people on the part of those charged with the administration of the forests in certain portions of the country, the possibility of strained international relations over pulpwood exports, the scramble for supplies in far remote regions of the country on the part of certain great wood-using industries have focussed the attention of the public upon the necessity of conserving our forest resources. In fact, some of the conditions foretold by propagandists are already upon us, conditions which we are in a measure unprepared to meet because we have not developed a sufficient number of men properly trained to solve some of the most urgent problems, and a good portion of these very problems are concerned with the habits and peculiarities of our most valuable trees.

## The Tree as a Starting Point

With this introduction, I will come back to my first statement. For the actual practice of forestry, the tree or rather an aggregation of trees, the stand, is the nucleus about which all knowledge revolves. In the first place the forestry student is introduced to trees as individuals. He studies their characteristics as reveal by their flowers, fruits, leaves and bark and he learns how to recognize them and call them by name when he meets them in the forest. A tree is a plant, and in many ways the most successful plant nature has ever produced. Thus in order that the student may gain a proper perspective he is given a course in Botany, where he learns about the long series of experiments and trials by which nature finally perfected our modern tree. All through his work in forestry he will come in contact with other plants which influence to a greater or less degree the lives of trees, and he gets acquainted with them in his course in Botany. In a similar manner there are animals, particularly insects, that affect trees often disastrously. These are not studied in the first year, but the foundations for such study are laid by the course in Zoology. In most forestry schools a kind of introductory course to forestry is given to the first-year students, in which the forest conditions of the country and methods of lumbering are described, the principles of forestry are laid down, and the work of the various forestry organizations is presented.

## Mathematics and Forestry

Unless a practising forester is thoroughly grounded in mathematics he is handicapped throughout his professional life, since the principles of estimating and measuring timber, topographic and land surveying, making roads and trails, etc., are based on mathematics, and so this subject is stressed in all forestry schools. Chemistry and Physics are fundamental subjects, and they are studied during the first year. The forestry student usually takes French or German in the first year, and at Toronto the language he selects he must continue for three years.

By this time the student, if successful, has completed his first year. His summer holidays are taken in the bush, where he carries chain or calipers trees in a timber crushing party, or assists in land classification and reconnaissance surveys, or work in a saw-mill, in a paper mill, or on a log drive or acts as a camp cook; in fact, he takes any job that will give him practical experience. He may fight flies or other pests continuously; he may sleep on the ground in wet blankets during two weeks of continuous rain; he may spend his time on his knees in a forest nursery; he may repeat the same operation over and over again until the monotony of the thing nearly drives him frantic, but it stiffens the backbone and it is all good for the soil; it weeds out the non-courageous and the non-persistent. Those who come back to us after the first summer we no longer call boys, but men.

## In the Second Year

During the second year the forestry student gets a still more intimate knowledge of trees both as individuals and their economic aspects. He learns how trees come into existence, how they live and work and, not least, how they get along with their neighbors. He studies the methods of determining the contents of single trees and stands of trees in terms of cords or board feet. He learns how the rules for determining the board feet in a log were made, and is shown why some of those in use are so unjust to the

seller. He is taught how to make volume tables according to the diameter of the trees or to the diameter and height or according to the diameter and the number of logs in the tree. He is thoroughly grounded in the methods of cruising and estimating timber and the application of the various methods to the different parts of the country. The student counts the rings on stumps or at the ends of logs and determines the present volume of the trees, and the contents ten, twenty or thirty years ago, and he predicts what the contents will be ten, twenty or thirty years hence. Grouping the trees together according to diameter and rate of growth, he can predict future yields on a given acre or on a larger tract.

The course in Surveying begins in the second and continues through the third years. The forestry student is made familiar with the general principles of surveying and the instruments used, such as the compass, chain, plane-table and transit, with practice in their use. The student in his second year also learns how the earth has been made as well as the making of the trees that grow upon it. The origin of the various Canadian rock formations is described and their distribution is determined. At the same time he is taught to distinguish at sight the common minerals and rock. The course in Chemistry is continued from the first year, and the course in tree description, and identification extends down through the scrubs and other woody plants that are found growing beneath the forest.

The second year students in their summer work usually get positions of increased responsibility—and they get more pay.

We have now gotten the student half way through his course, and we will leave him there until a later issue.

(To be continued).

### INVINCIBLE PAPER AND PULP CORP., AGENTS FOR MAINE PULP AND PAPER CO.

Arrangements have just been completed by the Maine Pulp and Paper Company with A. George Lutz, President of the Invincible Paper & Pulp Corporation of 135 Broadway, New York City, whereby the latter shall act as exclusive sales agents for the Maine Pulp and Paper Company, Skowhegan, Maine.

It has only been a few months since the Maine Pulp and Paper Company took over the plant, power rights and good will of the Savage Manufacturing Company who since 1908 were making colored papers and specialties. In a remarkably short time the new owners, in the face of many obstacles, have modernized the plant and are now turning out some 60,000 lbs. of wood pulp per day and in the neighborhood of 30,000 lbs. of newsprint. The mill is also equipped to make hanging, novel news, railroad writing and specialties.

Among other new equipment they have added four new grinders, several new dryers and are rapidly completing arrangements to double their output which will include a fourdrinier machine. An ample and steady flow of raw materials, particularly wood, is assured to take care of greatly increased output because of the fact that the Company now owns a large tract of growing spruce timber.

The officers of the Company, Mr. Wm. O'Hanlon, President, Mr. J. B. O'Brien, Vice President and Mr. C. C. Hallinger, Secretary and Treasurer, offer this new arrangement for the distribution of their output as an added service to the trade.

### SHOULD NEVER HAVE ANOTHER PANIC.

A business panic in this country would be chargeable to gross inefficiency and dereliction of duty on the part of business men and bankers, under the improved banking system now in force, it was declared the other day by James S. Alexander, president of the National Bank of Commerce in New York. He spoke before the eleventh annual convention of the American Manufacturers' Association, in New York. Answering the charge that bankers fail to co-operate with business in times of financial stress, he said that the action of the banks in conserving credit was the best co-operation they could extend under recent financial conditions.

The country's credit structure was never better built than it is today, he said, and in view of the elasticity given business conditions by the Federal Reserve System the country need never see another panic. Principles governing the domestic situation, particularly the duty of banks to readjust the credit situation when necessary, apply with especial force to the export trade, he said. He also expressed the belief that American manufacturers should market raw rather than finished products to Europe if a sound basis is to be laid for equalizing the existing adverse trade balances.

"The peak of credit expansion must soon pass," he said, "but this does not mean that there are not ahead of us many serious and necessary adjustments. There must be established stable price levels so that business can be conducted on a basis of confident judgment rather than of guess and speculation. There must also be adequate production, primarily in the more substantial lines of goods, so that we shall not continue to live on a narrow hand-to-mouth margin which is responsible for unstable prices. We must conserve credit so that there will be ample funds for long time investments to provide for the rehabilitation of essential permanent equipment, railroad building and repair, and necessary housing construction.

### ORIGIN OF THE WORD "SHAWINIGAN."

CHAWANIGANE, as it should be spelled, is an Algonquin word and is the name given to the falls and to our town. The Algonquins pronounced CHAWINIGAM. This word, says Father Lemoine, derives from "ahāwe" (it is angular, there is a ridge) and "onigam" (portage); therefore, it means "the angular portage," "the portage on the ridge."

The British have modified the spelling of this Indian word and write either Shawenagan or Shawinigan. Abbe N. Caron thinks that the spelling Chawinigan should be adopted, as it is nearest to the original word formation and more in accordance with the French spelling.

Mr. Benjamin Sulte (Bulletin of Historical Research, 1898) expresses the opinion that Chawinigan might also stand for "drill," "needle," "any tool moved by hand."

However, Abbe N. Caron (Bull. Hist. Res. 1898) reverting to the etymology of the word, is firm in his assertion that Chawinigan should be understood as meaning "ridge" and he explains that the Indians were obliged to ascend the ridge of a rock during their portage across the falls. This opinion being shared by Father Lemoine, "ridge" should be accepted as the translation of Chawinigan. — Shawinigan Falls Review.

First find out who are the fools and the sick men and then don't argue with them.

## British Trade News

(From our London Correspondent)

London, October 25th, 1920.

The President of the British Paper Makers Association (Mr. W. Leonard Tod), has been presented with his portrait in oils—a gift from the paper mill owners of Scotland. During the war Mr. Tod did a great amount of work in looking after the interests of the members of the Association and it is in recognition of his services that the presentation has been made. Mrs. Tod also received a souvenir. The painting is by Mr. Fred. Whiting, and next month it will occupy a position in one of the London galleries for view purposes.

### Attempt To Force Newsprint Price Down Fails.

The buyers of newsprint in London have failed in their attempt to force the price of newsprint down. Some one bought a cheap spot lot and instantly the newspapers and buyers commenced shouting that in a couple of weeks newsprint would be bought at 8 or 9 cents a pound instead of 14 and 12 cents. Naturally the people who were shouting did not understand the market conditions and once again newsprint prices are left to rest, thanks to the coal strike, which drew more attention than the paper market did. As things stand at present, the smallest incident regarding newsprint is magnified into three times its importance and large buyers adopt every means to beat down the market price.

This week a message from Montreal states that "It looks as if the great boom in Canadian paper stocks has seen its climax...." The daily papers tried to make much out of it in big head lines. One came out as follows:—

### CLIMAX OF THE PAPER BOOM.

*Market in Canada on The Point of Breaking.*

If the message is true, well and good: if it is not, steps should be taken to contraact it. It must be remembered that at the present time a great effort is being made—and the "Pulp and Paper Magazine" is playing no small part in it, as it is being widely quoted from here—to engender interest in Canada and divert the attentions of Capitalists to its great natural resources and industries, including pulp and paper.

### The British Paper Market

Apart from newsprint, the British paper market is firm and there is no sign of wavering on the part of the mills. It is true, however, that foreign paper is being offered in the market below the British prices. The idea of foreigners is to create a market. No first class foreign paper mill has come down in its price and the cheap selling is largely on the jobbers side, many of whom are today running about London picking up to the few crumbs that have remained untouched. The demand for paper of all kinds has slightly fallen off within the past month, and jobbers and dealers have suffered in consequence. Wholesale merchants are now taking their prices into consideration and something must be done in view of the determined attitude of buyers.

### The Miners Strike.

The coal miners strike for more wages has upset the paper mills considerably and the railway workers are now "seeing red" in sympathy with their pit colleagues. A great effort is at present being made to keep the rail-road men at their work and personally I don't think they will come out as there is a "split"

among them, one section being for fight and the other for peace. At all events between the lot the paper mills and the workers are receiving a serious setback and unemployment is increasing. Mills are now only allowed 50 per cent. of their usual weekly coal supply and all stocks of coal in the country are under the control of the Government. Most of the paper mills have fair stocks on hand, so that at present they are working cautiously and economically.

### Presentation.

Mr. Robert Gilroy, the chairman of the Northern section of the British Paper Makers' Association, has just completed quarter of a century with A. M. Peebles & Son, Ltd., the papermakers, and has been presented with a handsome gold watch in recognition of his long services. He is Peebles's mill manager and a first class man in the position. Mr. George J. Maddick, the chairman of the company, made the presentation and after it there was a most enjoyable dinner.

### Obituary.

Death has removed two well-known paper men, who have more than once visited Canada. They are Mr. William Dedrick, the managing director of Messrs. C. Townsend Hook & Co., of London, and Wm. John C. Potter, only son of the late Mr. J. G. Potter, one of the founders of Wall-Paper Manufacturers Ltd. Mr. Dedrick was a great man in the newsprint trade and some of the London papers pay a great compliment to his memory and refer to the pleasant dealings they always had with him.

### Decreased Exports.

For the nine months ending September, the exports of British mills show a decrease. This is an indication of the unsettled state of the colonial and foreign markets. The shipments for January-September were 1,590,281 cwts which is a decline of 1,089,302 cwts, when compared with the same period of 1913.

The imports into the British market from foreign mills, Newfoundland, and Canada, show an increase of over 10 per cent. when comparing the first nine months of this year with the corresponding period in 1913. Newfoundland newsprint occupies a prominent position in the imports, no less than 669,885 cwts being shipped.

The relative values of the exports and imports, of course, considerably exceed those of 1913.

### Papermaking Materials.

While the exports of paper from the United Kingdom show a decrease on the nine months figures, it is interesting to note imports of papermaking materials show an increase as the following returns depict for 9 months, viz. January-September last:—

1920	981,334 tons
1919	716,312 "
1913	896,198 "

These figures show that 85,136 tons of raw materials were received over the nine months in 1913 when mills were pretty brisk with an over-eas trade. The increase is due to larger dealings in pulps, chemical showing an increased importation of 140,237 tons, esparto rags and waste paper being on a decline.

### Swedish Mills "Shut-Up Shop".

From time to time I have been giving some straight hints at the state of things in Sweden and Norway, although some reports would lead one to believe that Scandinavians were full up with orders and work. For some time past all the mills in Scandinavia have been

suffering, if not from labour troubles, they have had dull markets, or coal troubles. Today some of the Swedish mills are closing down for a rest and in Norway there is a deadlock. The facts are verified in London. The rate of exchange is also complained of and the dullness in England is also reflecting itself in Scandinavia. Newsprint in Sweden is 7½d. per lb.; in England it is 5½d to 6d. per lb. Norwegian paper mills are not, however, so badly off as the Swedish.

#### The Pulp Situation.

Good shipments of groundwood and chemical are arriving here from Canada. Supplies from other countries are on a fair scale.

Export of coal having been stopped from England, the Scandinavian pulp mills have received a rude shock. A good many rely on English coal and there is talk of closing down.

The English pulp market is lifeless and nothing else could be expected in the midst of a huge strike in the coal mining industry and threats of other strikes all round. Groundwood quotations are firm, but sellers of chemical pulps are inclined to accept slightly lower values to encourage trade and they will make contracts for 1921 delivery.

Prices today are about as follows:—

Bleached Sulphite.....	£82 10s.—£84 0 0
Easy Bleaching (No. 1).....	52 10 — 56 0 0
Newsprint Sulphite.....	50 0 — 53 0 0
Unbleached Soda (No. 1).....	47 10 — 49 0 0
“ “ (Kraft).....	40 0 — 42 0 0
Groundwood (moist).....	17 5 — 17 10 0
“ (dry).....	33 10 — 34 0 0

#### Imports of Boards.

During September there was a falling off in the imports of cardboard, pasteboard, and leatherboards received from Canada while the shipments from U.S.A. increased remarkably. No leather boards were received from the Dominion and only a 1,000 odd cwts. of cardboard and pasteboard arrived. These branches of the British market should be carefully watched as there is a growing increase in the consumption of boards, although it may not be directly brought to the notice of Dominion manufacturers. Canada already enjoys, and has done for sometime, a good trade in mill boards. Out of the total imports of millboards received in September last amounting to 116,571 cwts., Canada sent 17,618 cwts., the balance of 68,953 cwts. being shared between U. S. A., Norway, Sweden, Netherlands, Germany and Finland. In regard to strawboards no supplies were received from Canada or U. S. A.

#### OTTAWA MILLS NEED WATER.

There is said to be fear that, if the Ottawa River should freeze over, without its present low level being raised by much needed rains, the industries, which rely upon its water for the power with which to run their plants, will be placed in a serious condition.

An instance of how the low water situation is affecting these industries is furnished in the case of the J. R. Booth plant of the Claudiere. Here, for the past five weeks, only one paper making machine is said to have been in operation instead of the normal number of three machines, and the company is about 5,000 tons of paper behind its normal output.

Don't blame others for dangerous conditions, says the Safety League, help to correct them.

#### FOUNDRY AT THE SOO RESUMES GRINDER MANUFACTURE.

The Northern Foundry & Machine Co.'s plant, Sault Ste. Marie, is again busy on the manufacture of pulp mill machinery. During the war they turned out their share of shrapnel and high explosive shells, afterwards when the armistice was signed, they, like many others, got busy to help replace some of the shipping that was destroyed by the enemy. They turned out their share of ship's auxiliaries, specializing in steering engines, cargo winches and circulating pumps.

Now that the shipping trade has somewhat subsided, they are making rapid strides on pulp mill machinery, and while before the war their chief activity was on machines for mills in the vicinity, to-day their sphere of activity has been extended greatly. The demand for their machines has necessitated their making extensions to their plant and they have recently added a large concrete extension to their iron and brass foundry, as well as installing equipments to handle their increased centrifugal pump trade.

Stock, acid and general service pumps, hydraulic presses, grinders, acid coolers, valves, split pulleys, etc., are among the lines manufactured.

They have recently added to their staff of engineers to cope with the design of these important machines. This, as well as the co-operation of some of the leading pulp mill engineers, enables them to give their customers complete and up-to-date data on pulp mill machinery.

Their sales end is being taken care of by Clayton, Neil & Jones, Limited, a firm of engineers having a wide and practical knowledge of pulp mill requirements.

#### INDUSTRIAL IMMIGRATION.

Many firms are establishing in Canada, and more will come. As far as the paper supply is concerned, I am of the belief that, with sane management and careful cutting, Canada can supply the demand of this Continent for much longer than has been estimated. It is sure that from year to year the operation is likely to be more costly as the mills move further North. At one time the mills were all tributary to the St. Lawrence and the Great Lakes; some already are operating on the waters which drain into Hudson Bay, and more will follow. Dr. C. D. Howe, an eminent Canadian authority, after pointing out that we may have to adapt our mills to the use of such substitutes for spruce as poplar and birch, goes on to show that there is "another alternative before the pulp companies, when the supply of 12 inch spruces gives out, and that is to operate in the Hudson Bay region, where small undersized trees are found. Thousands of square miles of wood that has attained its growth will never be any larger, and might as well be cut." It may be worthy of remark, that when that time comes the cost of production will be greatly increased, as the cost of running the camps alone in such districts will be extremely expensive." C. Price Green before the National Editorial Association, Boston, Mass.

#### WHY FOR?

On a mule we find  
Two legs behind  
And two we find before  
But we stand behind  
Before we find  
What the two behind be for.

# UNITED STATES NOTES

Richard Sheldrick, resigned as Secretary, Director and Sales Manager of The Kalbfleisch Corporation, after a connection of fifteen years, and is now Vice-President of D. A. Himadi & Co., Inc., 51-53 Maiden Lane, of which Mr. Himadi is President. Mr. Himadi has been in the chemical business for a long term of years and is President of the Lodi Trust Co., of Lodi, N.J. For the present they expect to do a general business as jobbers and manufacturers' agents, with offices at this address and at Lodi.

A 100 per cent increase in the capital stock of the Kalamazoo Paper Company has been authorized by the company stockholders. Through this increase, bringing its capitalization from \$1,605,000 to \$3,210,000, the Kalamazoo Paper Company ranks close behind the Bryant Paper Company, the largest paper manufacturing concern now operating in the Kalamazoo River valley, which boasts a capital of \$5,000,000 common and \$300,000 preferred. The stock issue, it is said, is being made solely to bring the capital to a point within a reasonable distance of the company's gross revenues. No enlargements or additions on any extensive scale are being contemplated at this time.

Alva Snyder, who has headed the Paper Section of the Federal Trade Commission since April, 1919, has resigned to become associated with the California Fruit Juice Company. F. X. Patterson, who connection with the Commission began with its organization, has been appointed Mr. Snyder's successor as head of the Paper Division.

The Kimberly-Clark and the Neenah Paper Company mills, pioneers among Wisconsin industrial establishments in accident prevention, observed "no accident week" November 1 to 7. For the benefit of the 25,000 employees in the eight mills of the two companies at Appleton, Wis., an elaborate programme was presented. This comprised talks by industrial safety experts, special safety meetings and many other features. It is claimed by officials of both companies that the number of accidents in the plants has been materially reduced due to the intensive safety campaigns.

F. G. Crane, founder, and until recently, manager of the Wardway Paper Mills at Fort Madison, Ia., has joined the executive staff of the American Seamless Container Company. The latter concern are the manufacturers of practical containers designed for extensive use in the candy, confectionary and printing ink industries. When he established the Wardway Mills, Mr. Crane started the first white paper manufacturing plant operated in Iowa.

Nearly one hundred trade executives formerly identified with the old National Trade Organization Secretaries gathered recently at Lenox, Mass., and revamped the old organization, forming a new nation-wide body to be known officially as the National Trade Executives' Association. The delegates present came from all parts of the country and represented all sorts of trade organizations.

The gathering of trade statistics by the Federal Trade Commission will be suspended for the present in all industries except the paper industry, according to an announcement given out by the Commission last week.

It was decided to discontinue the taking of these figures with reference to the coal, steel, and lumber industries, until the legality of requiring such statistics can be determined by the courts.

The regular quarterly business meeting of the News Print Service Bureau was held at the Waldorf-Astoria Hotel, New York, Nov. 9.

George P. Berkey, who has been in charge of various plants of the Consolidated Water Paper and Paper Company, is to become manager of all the company's mills in Wisconsin. Mr. Berkey has been identified with the Consolidated people since 1908 and he is now manager of the Interlake Pulp and Paper Company's mill at Appleton. He will leave his place with this subsidiary concern to take up headquarters in Wisconsin Rapids. George W. Mead, head of the Consolidated Company may gradually retire from the active supervision of the company properties.

The Bagley & Sewall Company, of Watertown, N.Y., manufacturers of paper making machinery, are reported has having turned out a Fourdrinier machine capable of running off 1,000 feet of paper a minute. This is over 200 feet per minute ahead of the best previous records. Since establishing a world's record in 1890, when the company installed its first machine in the Ontario Paper Mill, Watertown, running off 325 feet of paper a minute, the Bagley & Sewall Company continued to show the way in the production of record-breaking machines. 735 feet a minute was attained with a machine made in 1908 for the Pacific Mills, Ltd. The latest machine was built for the Wausau Sulphate Fibre Company of Mosinee, Wis. The achievement of 1,000 feet per minute in the production of 20 pound kraft paper is claimed for this machine, the actual record production having been made on October 23.

Figures compiled by the U. S. A. Census Bureau and the Electrical World show that from 1907 to 1920 there was more water power capacity developed and installed in Georgia than in any other state of the United States.

Elimination of the public drinking cup and the statutory demands for sanitation in all drinking fountains has resulted in the development of the paper cup as the solution of the problem of providing efficient yet sanitary drinking methods. A practical cup, needing no special equipment for its installation at fountains is being made by the Royal Paper Goods Company, New York City. This paper cup, it is claimed, is the least expensive of any on the market. It is packed in cardboard cartons and made so that a number of them in the cartons can be hung on the wall of office or factory or attached to the top of the water bottle by means of a small collapsible wire rack.

## SOURCE OF PAPER.

Editor.—I can't understand where you get all the paper to write your poetry on when there is such a scarcity of the material.

Poet.—Oh, I use the backs of all the bills I receive.

In climbing the ladder of Success, remember two things—Do not lick the heels of the man above you —nor kick the face of the man below.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**A-1. Direct determination of lignin in cellulosic materials.** E. BECKER. *Papier fabr.* 17, 1325-1327 (1919): One gram of the finely divided material is mixed with 10-20 cc. of 72 per cent. sulfuric acid by means of a glass rod. When the mass becomes gelatinous a further 80-100 cc. of the acid is added, and the mixture allowed to stand for 24 hours. It is then diluted with 1-5 parts of water, passed through a Gooch crucible, washed with hot water, dried to constant weight, ignited and weighed, the difference between the two weights giving the amount of ash free lignin.—C. J. W.

**A-15. Lignin and reactions of lignin.** P. KLASON. *Ber.* 53, 706-711 (1920). The naphthylamine lignin-sulfonate described previously has been investigated further. Its formation is considered to indicate the presence of the group RCH:CHCHO in lignin. It is formed in greater quantity from old than from fresh sulfite liquors and it would appear that the group CH:R:CH(OH) is present in the latter and that the aldehyde, in part, at any rate, is gradually formed in them by atmospheric oxidation. It is concluded that coniferyl aldehyde and alcohol are the principal constituent groups at any rate of the lignin of conifers.—C. J. W.

**A-15. Absorption capacity of cellulose.** Electrometric micro-analysis of chlorine. P. RONA and L. MICHAELIS. *Biochemische Zeitschrift* 103, 19-3 (1920). Cellulose does not appreciably adsorb surface-active non-electrolytes (keptyl alcohol, secondary octyl alcohol). Only in the case of extremely active substances (normal octyl alcohol) can very slight adsorption be established. The more marked adsorption of electrolytes (dyes) by cellulose is due to the mineral content of the cellulose, principally calcium silicate, which is present in small quantities, sufficient to account for the adsorption observed, even in so-called ash-free filter paper. The estimation of chlorine by the electrometric method with a calomel electrode is described and discussed. C. J. W.

**K-12. Sweeping the air and water out of driers on paper machines.** F. C. Farnsworth. *Paper* 26, 559-60, 1920. A description of the Farnsworth differential system of heating the driers, whereby the pressure in the return header is always kept lower than in the steam header, thereby ensuring the continual and efficient sweeping out of the air and water from the driers.—A. P. C.

**L-4. Machinery for making cardboard tubes.** *Fr patent No. 499,238*, Feb. 21, 1919. *Jas. Steedman Hobbs, England. Papeterie*, 42, 359-62, Apr. 25, 1920.

**L-5 Nitrocellulose from woodpulp.** R. G. Woodbridge Jr., Experimental Station, E. I. du Pont de Nemours Co., Wilmington, Del. *J. Ind. & Eng. Chem.*, 22, 380-1, 1920; *Paper*, 26, 391, 401, 1920.—A. P. C.

**L-7 Paper as a textile material.** *Camille Lion Bull. Soc. Ind. Rouen*, 47, 203-9, 1919. Review of an art by P. Petit in the *Revue de l'Expansion Economique*, June-July 1918, giving a description of the development of the paper textile industry, not especially in Germany.—A. P. C.

**M-1. Pneumercator gauge.** *Paper*, 26, 405, (1920). A brief description of some of the many uses to which the pneumercator gauge can be put in a pulp or paper mill.—A. P. C.

**M-4. Standard sizes for shafting.** *Paper*, 26, 678-9, (1920). A committee of the Am. Soc. of Mech. Eng. has adopted as standard 14 sizes of transmission shafting and recommends a large reduction in the no. of sizes of machinery shafting. The standard sizes of transmission shafting are: 15-16, 1 3-16, 1 7-16, 1 11-16, 1 15-16, 2 3-16, 2 7-16, 2 15-16, 3 7-16, 4 7-16, 4 15-16, 5 7-16, 5 15-16 inch. (One of the standard sizes has been omitted in the article, evidently 3 15-16. Abstractor's Note).

**N-10. Colloidal fuel.** M. Desmarests. *Rev. Gen. Sci.*, 31, 146-7, (1920). Owing to increased consumption of oil by the Allied navies during the war, attempts were made to prepare an emulsion or "colloidal solution" of coal in oil, which would stand up indefinitely. Theoretically this can be done in 4 ways: 1) Grinding the coal finely enough that an absorption compound will be formed between the coal and the oil, resulting in a true colloidal soln.; 2) Thickening the oil so as to decrease the rate of settling of the coal; 3) Adding light particles which act as flocculating agent; 4) Adding a "fixateur" in small quantities, 1 p.e. of the mixt. The last is the only practical method; but for military reasons the nature of the "fixateur" has not been disclosed. The addition of the coal increases the viscosity of the oil very appreciably, decreases the B. T. U. per unit weight, but increases them slightly per unit vol. Up to 40 p.e. by weight of coal and 59 p.e. of oil, the fuel remains liquid; with increasing proportion of coal it thickens, but up to 65 p.e. of coal it can be pumped and burned in the usual oil burners. A 3 months' test on an American war vessel equipped for burning oil showed practically the same consumption of B. T. U. per effective H. P. as oil, no appreciable wear on the burner nozzles, no deposit in the piping, but some deposit (easily removed by injecting steam) in the nozzles when shut down for more than 2-3 min. at a time. The saving in oil was about 27 p.e. In so far as can be judged by data published to date, colloidal fuel is intermediate between fuel oil and pulverized coal and does not seem to offer any great advantage over either of these.—A. P. C.

**P-2. Report of the Committee on Vocational Education of the T. A. P. P. I.** R. S. Källogg, Secretary. *Paper*, 26, 376-8, (1920). Text of the report presented at the annual meeting of the T. A. P. P. I., New York, Apr. 14-15, 1920.—A. P. C.

**R-2 Report of the committee on bibliography of the T. A. P. P. I.** Henry E. Surface, Chairman. *Paper* 26, 372-6 (1920). Text of the report presented at the annual meeting of the T. A. P. P. I., New York, Apr. 14-15, 1920, followed by a list of the contributions of the committee to date.—A. P. C.

**R-13. Annual meeting of the T. A. P. P. I.** *Paper*, 26, 470-96 (1920). A detailed account of the annual meeting of the T. A. P. P. I., New York, Apr. 14-15, 1920.—A. P. C.



**R-O. Pulp and paper research problems.** Investigations planned and accomplished by the U. S. Forest Products Lab. Paper 26, 312-20, (1920). A list of the more important and pressing problems of the pulp and paper industry, showing what progress, if any, has been made by the laboratory on the solution of these problems, covering raw materials, sulphite pulp, soda and sulphate pulps, mechanical pulp, paper mill problems, and specialties. A bibliography of the work already done is appended. (See Pulp & Paper, June 3, 1920).—A. P.-C.

### PHLOROGLUCINE AS A DETERMINATOR OF WOOD PULP.

Quantitative determination of wood pulp in paper by the phloroglucine process is possible only when all conditions prescribed are strictly adhered to, says Th. Blasweiler in an article published in the "Papier-Fabrikant," of which a translation appears in the Paper Trade Journal. Blasweiler found a divergence of figures when studying the result of phloroglucine absorption. These figures were affected by concentration of the absorbing phloroglucine solution. Cross and Bevan called attention to this peculiarity.

Lignine absorbs phloroglucine. The remaining phloroglucine is volumetrically determined in a thin solution of formaldehyde, after the Tuepfel method. Paper containing a large percentage of pulp serves as indicator.

According to the author's prescription 2 g. of rasped paper, well dried, is mixed with 40 ccm. of phloroglucine solution. The small amount of fluid, most of which is absorbed by the paper, protracts filtration and leaves only 10 ccm. of filtrate for each of the two determinations.

In order to expedite the examination, Blasweiler added 80 ccm. of a 12 per cent solution of muriatic acid to the 40 ccm. of phloroglucine. The larger amount of fluid accelerated filtration, after absorption had ended, and left 25 ccm. for each determination. The result was that absorption values in the latter case were higher by one-half or one-third than in the case where an undiluted solution of phloroglucine had been applied.

In order to determine the percentage of wood pulp in paper, after the Cross and Bevan method, the formula has to be followed very strictly, as any change of concentration will result in false figures, figures that disclose a percentage of wood pulp much higher than actually present.

#### Mode of Procedure

Blasweiler says in his first experiment he used the white margin of the Continental "Times". He rolled the paper into small hand cones and rubbed them against a rasp. The paper was then carefully measured. Blasweiler added to the phloroglucine solution of 40 ccm., containing 4.9913 g. of phloroglucine in 1:000 ccm., 80 ccm. of a 12 per cent solution of muriatic acid. After shaking well, he left the bottle standing over night. Before filtering he shook the bottle again. Of the fluid filtrate 25 ccm. each were reitrated in a bath of water, heated to 70 degrees C., with a solution of formaldehyde (1ccm. of 40 per cent formalin to 500 ccm. of 12 per cent muriatic acid). After the formula of Cross and Bevan he then figured out the pulp percentage of the paper. This is the equation :

$$H = \frac{100(x-1)}{x}$$

H stands for pulp percentage, x for the absorbed amount of phloroglucine, in proportion to 100 g. of matter.

The first determination resulted in :

Application : 2.0102 g. of rasped paper, air dry.

Consumption : 8.40 g. of phloroglucine to 100 g. of matter.

Phloroglucine figure  $x = 8.40$ .

The second determination resulted as follows :

Application : 1.9995 g. of rasped paper, air dry.

Consumption : 8.46 g. of phloroglucine to 100 g. of matter.

Phloroglucine figure  $x = 8.46$ .

Average phloroglucine figure: 8.43.

Applying the formula, as given above, the answer would be a percentage of 106, an obvious impossibility.

#### Results Obtained

When Blasweiler followed the original method, adding only 20 ccm. of 12 per cent muriatic, he obtained an average of 5.50 as the phloroglucine figure. In this case the answer to the equation, according to formula, is 65.71. Accordingly the paper of the Continental "Times" contains 65 per cent pulp to 35 per cent cellulose, which conforms to the actual facts.

Blasweiler, in another experiment, used the margin of the Berlin "Lokal-Anzeiger." Application of the modified method resulted in 97 per cent as the percentage of pulp in the paper, again an utter impossibility. The original method resulted in giving the figure 59.43. Accordingly the paper used by the "Lokal-Anzeiger" contains 60 per cent of pulp and 40 per cent of cellulose, which is correct.

#### PICTURES BY WIRE.

It has been some forty years since methods were invented for transmitting pictures and diagrams telegraphically, but like most inventions it had to wait for a generation before it could hope for general use. The telantographs are still new in our banks, hotels and railroad stations.

Within the last month or so newspapers have been experimenting rather successfully with the same idea in connection with telegraph and telephone wires.

The drawing is made through carbon paper on to a copper cylinder. The cylinder is then revolved while electrically connected with the telephone or telegraph line. The carbon lines of the drawing vary the current transmitted. These variations affect the receiving instrument which throws beams of light on an unrolling sheet of photographic negative paper. The different intensities of these beams of light, (resulting from the different intensities of current transmitted) result in a facsimile photograph of the original drawing on the carbon paper.

It is understood that the Italian Government intends to use one of these devices for the transmission of official signatures between Rome and Milan, and it seems reasonable to suppose that a few more years will enable newspapers to publish sketches of events on the other side of the world within a day or so after their occurrence. Like a large number of modern inventions, its carrying out depends on the use of specially prepared PAPER.—From "The Caravel".

Based on account in "Le Petit Journal," as reprinted in the New York Times.

To maintain order, excellence and harmony in the territory immediately under one's own hat will keep one fairly well employed.—The Hammermill Bond.

# PULP AND PAPER NEWS

Mr. H. M. Mosdell, Managing Editor of the St. John's, Newfoundland, Star, who is in Toronto just now, brought the information that active negotiations are now proceeding by Lorth Rothermere with a view to forming a one and a half million dollar company to take over pulp and timber limits in Newfoundland and to develop the huge water power resources there. It is stated that already options are being secured and it is expected that the project will take definite form very shortly.

The editor of the new Presbyterian Church weekly, the Presbyterian Witness, will be Rev. Dr. G. S. Carson, of Halifax. Dr. Carson, who was for fourteen years editor of the Halifax Witness, is a native of New Brunswick, and prior to assuming the position of editor of the Halifax church paper, was pastor of Knox Church, Pictou, N.S. for nearly twenty years.

Mr. W. P. Bennett, of the Rudd Paper Box Company; Mr. G. Shaw of the Telfer Manufacturing Co. Mr. A. Jephcott of the Dominion Paper Box Company, Mr. A. Sproule of Collett & Sproule and Mr. James Logis of the Canada Box Board Company were in Montreal this week attending a meeting of representatives of the Canadian box board industry.

Mr. A. P. Costigane, secretary of the Ontario Pulp and Paper Makers' Safety Association, visited the Cornwall mill of the Howard Smith Paper Company, Limited, a few days ago, and also the Provincial Paper Co's mill at Mille Roches. Mr. Costigane reports that in spite of construction operations that are in progress at Cornwall, the company, owing to careful and far-sighted management has been able to keep the accident record down remarkably low. It is expected that a meeting of the directors of the Association will be held in Toronto at the end of this month when various matters connected with accident prevention will be considered.

Mr. George Erskine, Toronto representative of the George H. Mead Company of Dayton, Ohio, is in Winnipeg calling on the firm's customers.

Failure to put a cap on a water pipe before the pressure was turned on was responsible for a small flood in the warehouse of the Fred W. Halls Paper Company, Limited, on Adelaide Street, Toronto, a few days ago. Damage to stock amounting to about \$2,000 resulted.

Mr. E. S. Crabtree, of the Bathurst Lumber Company, Limited, Montreal spent several days this week in Toronto on business.

A visitor to Toronto this week was Mr. W. E. Duncan of the Paper Export Association at Montreal.

Mr. W. J. Trimble, well known in Toronto and elsewhere as a paper mill constructor and contractor, was called to Philadelphia a few days ago to attend the funeral of his father who passed away at the age of 83 years.

Mr. D. H. Hudson, of the Hudson Paper Company, Winnipeg, was in Toronto this week on his way back from Brockville where he attended the funeral of his

Mr. J. M. Gardner, of Toronto, was elected to the Board of Directors of the Mail Advertising Service of North America which was organized in Detroit, recently.

The Provincial Paper Mills, Limited, head office Toronto, has received a word that the company has been successful in tendering for a timber berth of seventy square miles in the township of West Hele. It is estimated the limit contains about seventy-five thousand cords of pulpwood.

Mr. C. Blackett Robinson, one of the oldest journalists in Canada who for the past twenty years has been a resident of Ottawa, celebrated his 83rd birthday recently. Mr. Robinson's journalistic career started in Beaverton where in 1857 he ran the Post. He afterwards came to Toronto where he started the Presbyterian and later was associated with the late Goldwin Smith in the publication of "The Week". Mr. Robinson also started the Orillia Expositor.

The St. Lawrence News, weekly newspaper published at Iroquois, Ont., has suspended publication.

A meeting of the Canadian Pulp Box Manufacturers Association was held in Montreal on Wednesday, November 3rd when opportunity was taken at the same time of meeting the representatives of the board mills to discuss present trade conditions.

Mr. J. L. McNichol, former assistant Paper Controller has joined the staff of Porritt & Spencer (Canada) Ltd., manufacturers of paper mill felts, as Sales Manager.

## LAURENTIDE TO INSTALL WIRELESS.

Plans are being discussed at present concerning the installation of a wireless telegraph station in the plant of the Laurentide Co., Grand Mere, P.Q., probably under the supervision of the Forestry Department, for the purpose of communicating with the company hydroplanes, and also to receive messages from the planes in emergencies. Both machines have wireless sets.

## JAPS TO BUILD MILL IN B. C.

The rapidly growing pulp and paper industry of British Columbia is soon to be augmented by additional plants.

A New York Company, says The Daily Financial News, of San Francisco, will build a mill at Kitimat Arm, some miles north of Prince Rupert, and a Japanese firm has acquired a tract of lumber on Louise Island in the Queen Charlotte group, with the intention of erecting a plant as soon as the financial situation in Japan clears up.

## RICE STRAW AS RAW MATERIAL IN THE PAPER INDUSTRY.

According to "Eastern Engineering", a combine of Dutch paper manufacturers proposes to establish a factory in the Dutch East Indies for the manufacture of paper from rice straw. It is stated that excellent writing paper has already been made from this material.



# The Markets

## CANADIAN PAPER TRADE CONDITIONS.

Toronto, Nov. 5.—The Canadian paper trade generally is looking for lower prices but as yet there are none to record, unless events of the week result in the lowering of box board prices. Some members of the Canadian box board industry are understood to consider that the present is the time to make a downward revision in the price list in order to meet the American competition. The consumers of box board are convinced that the product went altogether too high and that the manufacturers should be well able to shave the present prices down to a more normal level. Whether or not the industry will be able to retain the high price level will largely depend on the result of circumstances now largely operative in the United States although it is pretty generally predicted that there will be a downward revision in the near future, if not at once. All other paper products remain firm in price and in most cases somewhat freer in deliveries.

**WHAT THE MILLMEN SAY.**—As stated last week the jobbing trade is endeavoring to bring pressure to bear on the paper manufacturers to set a fast price on their product and by abolishing the proviso as to price prevailing at date of shipment. In reply to the contention that the manufacturers should now unite to bring the market back to normal one of the manufacturers made this statement to a Toronto jobber: "The situation, I am sorry to say, does not show any signs of clearing at the present time. In fact, we are just as much in the air as we ever were. However, I quite realize what you say about taking orders on fixed prices and I quite agree that there is a lot—a whole lot—in orders being paced on a fixed price basis. As regards American and British mills I am satisfied that they will not be able to export paper into Canada that can be made here and I know that as far as our mill is concerned, we will be in a position to compete, and it will be our constant endeavor to supply goods to the trade at a price at which there will be no possibility of foreign competition." Although the tone of this statement gives little hope of immediate relief from the disability under which the jobbers are operating in the way of the absence of fixed prices, the paper dealers declare their intention of following the matter up further.

**U. S. PRICES TUMBLING.**—Local dealers have been advised that prices on the other side of the line are on the downward grade. Tag manilas and tissues, for instance, have dropped 30 per cent. This drop, it is stated, is not on the part of the mills but by the jobbers who are evidently overloaded and are bent on price cutting. It is the general impression that this will eventually bring down the mill prices, although as far as can be learned little or none of the American product in these lines is being offered the Canadian market. As further indicating the possibility of serious American competition a Toronto jobber this week was offered one hundred tons of S. C. book, rolled, at 11c a pound, which would cost 17c laid down here as compared with 20½c, the jobber is paying to the Canadian mills.

**TISSUES AND TOILETS.**—Prices in these lines are firm with no reduction in prices but buying is a little more conservative. The trade is not buying anything more than is required for immediate use, but the orders that are coming into the mills are for immediate delivery and use, although there are a few orders coming in for future delivery. All of which indicates that stocks are low. There have been practically no cancellations and no changes in prices are looked for six months at least.

**BRISTOL BOARDS.** The trade reports that Bristol boards are coming in considerably more freely than for some time past and orders are being shipped promptly. There is a good demand in the trade for the goods and prices remain firm.

**BLOTTING PAPERS.** There are fairly free imports of blotting papers from the States and according to reports brought by travelling representatives from across the line a drop in the price of the product is not looked for within a year's time. Not only blotting but other American papers as well are being freely offered and as an evidence of the changed condition in the trade it may be mentioned that one jobber handling imported stuff was this week called upon by four different mill salesmen. The local jobbers however, are showing a disposition to give the preference to the Canadian mills wherever possible without too big a sacrifice.

**GLASSINE AND GREASEPROOF.** There is a fair demand for these products and the mills have all the order they can fill. Prices remain firm and the mills are getting caught up with back orders.

**BOOK PAPER.** There is still a shortage of book papers and jobbers are unable to secure enough to meet the demands of their customers. Book papers are in a class pretty much by themselves as far as scarcity goes and have lagged behind in deliveries while other lines are getting fairly well caught up. Jobbers complain that some of the mills, after allowing orders to pile up and overlap, are now running the combined orders and will not accept cancellation of any part of the total. Naturally the jobber does not want to get too heavily loaded with stock and in some instances attempts are being made to get the mills to cancel part of the accumulated orders which the mills are not inclined to do.

**BONDS AND LEDGERS.** Supplies of these lines are coming through from the mills spasmodically. The mills are running on whites and as the demand is for colors these are very hard to get. As in other lines of paper prices remain firm and unchanged.

**BOX BOARD.**—Late in the week the box board situation changed. The general tendency is to bring down the prices of various lines. Straw board, chip board and No. 3 pulp board will now be quoted at \$108 per ton as against the old price of \$133. All other grades of board, except specials have been reduced ten per cent which brings them back to the old price in effect at the end of August of this year. The new prices are good to December 31st, 1920. In this connection the last paragraph of our British Trade News will be of interest and may be suggestive.

### NEW YORK MARKETS.

New York, November 6.—(Special Correspondence.)

According to all reports, the paper market is becoming quieter from day to day. Consumers in various quarters are doing very little new buying, and were it not for the fact that manufacturers and jobbers have contracts on their books, business would be practically at a standstill, so little current purchasing is being done. The market is in a waiting condition all around. Producers of paper are not endeavoring to press buyers with a view of stimulating demand, neither are they rashly reducing quotations in anticipation of attracting buyers into enlarging their operations. Sellers of paper, in other words, are pursuing very nearly the same policy as are buyers—that of holding aloof in the firm belief that prevailing conditions cannot last indefinitely and that demand for paper of all grades will soon revive to a more normal scale.

With the exception of those on box boards, prices are holding remarkably steady in the face of the narrow demand. Quotations are easy in most cases, as would be logically expected under ruling circumstances, but if it can be said in favor of manufacturers that such declines as have occurred have been in orderly fashion and have not shaken the equilibrium of the market. Paper manufacturers contend that the cost of producing paper of all kinds has decreased but slightly and that for this reason alone they are justified in maintaining quotations on the finished product. Moreover, many freely predict that when business activity broadens, prices on good many lines of paper will appreciably strengthen unless the cost of raw material and labor should decline in the meantime, which seems improbable.

New low prices are reported on newsprint in the spot market. There have been sales of roll news for prompt delivery rumored at as low as 7.50 cents a pound, while actual sales have been recorded at 8 cents. Whether or not print paper is available at less than 8 cents is questionable. Perhaps in some out of the way case a lot has sold this cheap but no one in the paper trade will acknowledge having offered out newsprint at such figures, 8 cents being about the bottom price quoted. The steadfast refusal of large publishers to buy in the open market, together with the increased offerings of foreign newsprint, are weakening factors. It is likely, too, that the reports concerning large tonnages of newsprint that Germany and Finland are planning to ship to the United States have had effect notwithstanding that a majority of the trade are decidedly skeptical regarding such supplies from abroad. The contract basis on newsprint rules firm at around 6.50 cents and it is significant that consumers not only are taking all the paper that is due them on contract but that they are trying to acquire additional amounts at the same price.

The book paper market is characterized by rather novel conditions. There is steady and voluminous movement of supplies toward consumption on contracts but little demand for spot shipments. In other words, publishers are absorbing all the paper they can get at the low market levels but are refraining from buying at the prices asked on spot deliveries, with the result that tonnage of both roll and flat stock is much easier to secure for quick delivery. Prices hold at about previous marks although reports are heard from time to time of lots changing hands at concessions from the quotations named.

Tissues and wrappings are a bit lower in price. No. 1 white tissue is quoted at around \$1.85 and No. 2 white and No. 1 manila at \$1.70 to \$1.75, while No. 1 domestic kraft wrapping for prompt delivery is priced at 10.50 cents a pound and No. 1 jute wrapping at 13.50 cents. Demand for both kinds of paper is quiet.

Fine papers are moving slowly in so far as regards new orders, and while quotations on low grades of bonds and ledgers display a softening tendency those on high qualities rule strong. There is a feeling that fine papers cannot recede very much, if any, for the reason that production costs remain high and in some instances continue to rise.

Further weakening of quotations on boards has occurred. The lowest price named on plain chip board is \$60 per ton at mills, and a more representative quotation is in the neighborhood of \$65, while news board is quoted at \$70 to \$80 f.o.b. mills. Demands for boards is at an exceedingly low ebb and it is reported on high authority that several mills have shut down for a time while it is definitely known that most board plants have curtailed operations.

GROUND WOOD.—Little change is recorded in the mechanical wood pulp situation. There is little demand of important character emanating from consuming quarters, but there is an undertone of steadiness in prices and producers are holding firm for \$125 per ton at shipping points for domestic ground wood of prime quality for prompt delivery. Imported ground wood is available at lower prices than domestic, offerings down to \$110 a ton ex dock being reported, but this pulp is sold on a dry basis and it is understood that only certain mills are using it. Authoritative reports state that stocks of ground wood at both producing and consuming points are at low levels, and members of the trade express the opinion that freezing weather will likely be accompanied by a strengthening of the pulp market because it is believed that if production is hampered at all prices will be forced upward solely by the law of supply and demand.

CHEMICAL PULP.—Buyers of chemical wood pulp are holding aloof and sellers are mostly pursuing a similar policy. Papermakers as a general thing, are eking out contract supplies in such a way as to enable them to keep out of the market for the present, yet manufacturers and importers are not pressing customers and are waiting a revival of demand in the confident belief that market activity will appreciably broaden in the near future. If anything, the undertone of the market has been firmer this week than before, the ending of the British coal miners strike being responsible for the more bullish feeling in the trade. While the coal strike was in progress pulp men here appreciated that should the strike last for any length of time doubtless considerable quantities of pulp would be diverted from England by Scandinavian shippers to this market, and now that the probability of this has been eliminated by the settlement of the strike, dealers here do not look for any larger supplies from Sweden or Norway. Prices are holding fairly steady although there is no denying that some lots of pulp are being obtained at recessions. Kraft pulp, in fact, is anything but firm in price and can be purchased at comparatively low figures. News grade sulphite is slightly off in value with revised quotations ranging from 7 to 7.50 cents per pound at pulp mills.

Arrivals of foreign pulp at the port of New York this week included 4,291 bales from Kobe, 16,247 bales



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from Kotka, Finland; 10,220 bales from Trondhjem, and 245 bales from Halifax.

**RAGS.**—Extreme quietness obtains in the paper-making rag market. There are few buyers in view and prices on most kinds of rags are steadily moving toward lower levels. New cuttings are fairly firm, owing to the slow production of such rags at present, but old rags are to be had at almost any prices consumers are willing to offer. Sales of roofing rags have been reported down to 1.30 cents a pound at shipping points for No. 1 packing and at 1.20 cents for No. 2 roofing, and demand even at these figures is of negligible character. Roofing felt mills are in want of business and, having ample stocks of rags on hand to cover current requirements, are not buying excepting in a spasmodic way. Old whites are quotably lower at a basis of as low as 10.50 cents for No. 1 repacked, and thirds and blues are freely offered to mills at 3.75 cents f.o.b. dealers' points for packed stock. No. 2 repacked whites are available at 5.50 cents per pound, black cotton stockings at 3.50 cents, lace curtains at 7.75 cents and new washable at 11.50 cents. New white shirt cuttings are held with considerable firmness by packers at between 25 and 26 cents a pound for No. 1 quality cuttings.

Receipts of foreign rags at New York this week were: 151 bales from Hamburg, 721 bales from Bordeaux, 1,349 bales from Havre, 59 bales from Hull, 14 bales from Liverpool, and 43 bales from Rotterdam.

**PAPER STOCK.**—Dullness continues to prevail in the old paper market and prices on a majority of grades have fallen to new low points. Packers assert that the values obtainable for low qualities of waste paper do not begin to compensate them for collecting and sorting stock, and many are drastically reducing their production. This has little effect on the market, however for the reason that mills are not doing enough buying to make the shortage visible. Prices are largely nominal, but the following are approximate market values: Folded news, 1.20 cents; No. 1 mixed papers, 65 to 75 cents per hundred pounds; heavy No. 1 books and magazines, 2.15 to 2.25 cents; No. 1 hard white shavings, 8.75 to 9 cents; No. 1 soft white shavings, 7.75 to 8 cents; No. 1 manilas, 1.80 cents; white blank news cuttings, 4.50 cent, and old No. 1 kraft, 4.25 cents.

Imports of miscellaneous paper stock at this port this week included 1,692 bales from Rotterdam, 35 bales from Liverpool, and 8 bales from Glasgow.

**OLD ROPE AND BAGGING.**—There is an absence of demand for old bagging and prices are uncertain at a basis of about 2 cents per pound at shipping points for No. 1 serap bagging. Old rope is in moderate call

and mills are covering requirements at an average figure of 6 cents f.o.b. New York for No. 1 manila rope.

Arrivals of old rope from foreign sources at New York this week included 76 coils from British, and 80 coils from Hull.

### THE SAD TALE OF TEN WORKMEN.

Ten healthy workmen, starting off so fine;  
One biffed a motor truck, and then there were nine.  
Nine healthy workmen reached the factory gate;  
One stepped on an upturned nail, and then there were eight.

Eight healthy workmen, each scorned the Safety Code;  
Ere the clock had moved a jiff, one in an ambulance rode.

Seven healthy workmen, one tried a crank to fix;  
He didn't throw the belt off, and then there were six.  
Six healthy workmen; it's a wonder they're alive,  
For a thumping big electric shock reduced the crew to five.

The five men called a meeting. They were getting rather sore.  
But failed to note a swinging crane, which brought them down to four.

The four men thought of Safety First and always careful be;

An object thrown upon the floor reduced the four to three.

The three looked at the warnings about the factory wall,  
But soon the three was cut to two, as one had "took a fall."

The two bore bravely on; none else was to be done,  
A flying chip and exposed eyes cut the roll call down to one.

The one was left dejected. "'Tis very cruel", he said.  
An engine cut him right in two, and the last of the ten was dead.

Now this is a sad, sad story; I know you'll weep and curse;

But if these men had only thought, they wouldn't be in this verse.

Each thought that safety was a joke, just like the chicken roost,

When them as can come back to work, each will for safety boost.  
Wingfoot Clan.

### WHY MISTAKES ARE MADE.

Three-fourths of the mistakes a man makes are made because he does not really know the things he thinks he knows.—James Bryce.

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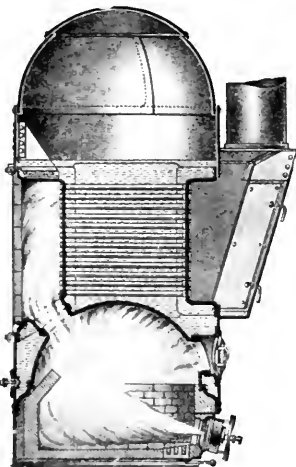
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VANCOUVER,

### IMMIGRATION FACTS.

For the year ending June 30, 1920, the total number of immigrants entering Canada was 137,300 compared with 70,701 in the previous year ending on the same date, an increase for the last year of 66,599, or 94 per cent. From July 1, 1919, until June 30, 1920, 77,711 of the immigrants came from the British Isles, compared with 19,437 in the previous year; 48,624 from the United States, compared with 44,003; 8,783 from Central Europe, against 1,325; 2,182 from other countries against 5,936.

The newcomers all had at least the amount of money required under the provisions of the Immigration Act and all passed the strict medical examination. As there has been some objection raised by Canadians being questioned by officials of the Department of Immigration when returning from other countries, the Department has arranged the use of identification cards to all bona fide Canadian citizens. These cards are prepared in duplicate and bear the traveller's photograph. By means of these, Canadians can re-enter the Dominion without difficulty—Department of Immigration and Colonization, Ottawa.



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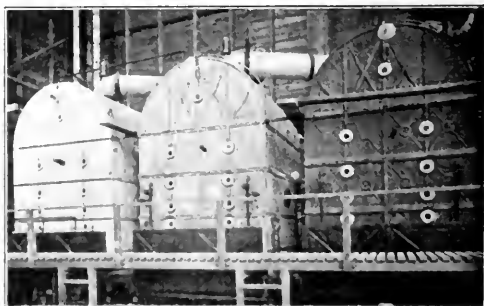
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OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

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No. 47

## TABLE OF CONTENTS

### *Editorial:*

The discoverer of ground wood pulp . . . . .	1177
False fear of Finland . . . . .	1177
A suspicious "World" . . . . .	1178

### *Special Articles:*

Ground wood pulp actually discovered in Canada . . . . .	1179
Testing kraft pulp for strength . . . . .	1181
What the forest products laboratories can do for the paper manufacturers . . . . .	1185
How the Canadian Woodlands Section started . . . . .	1186
Economic utilization of heat and power in paper mills . . . . .	1189

### *Miscellaneous Information:*

The Fungi Man . . . . .	1178
Land settlement and paper mills . . . . .	1180
The importance of accuracy in pulp testing . . . . .	1192
Review of recent literature . . . . .	1193
Useful catalog on belting . . . . .	1203

### *News of the Industry:*

Advise Harding on forest policy . . . . .	1184
British trade news . . . . .	1187
Much interest in pulp lands in B. C. . . . .	1187
Future paper prices . . . . .	1188
A good word from the Union . . . . .	1188
Cornwall to have new paper mill . . . . .	1192
Students' summer work successful . . . . .	1193
United States notes . . . . .	1194
Brazil may make pulp . . . . .	1194
United States is Canada's logical market . . . . .	1194
Now Tippet & Co. . . . .	1194
Joins Emerson staff . . . . .	1194
Pulp and paper news . . . . .	1195
Approved conditions at Belgo . . . . .	1196
McGarry visits Wyalen mills . . . . .	1196
Crandon Company changes name . . . . .	1196
Pont Rouge notes . . . . .	1196

### *The Markets:*

Heavy chemicals . . . . .	1184
Canadian trade conditions . . . . .	1198
New York markets . . . . .	1200

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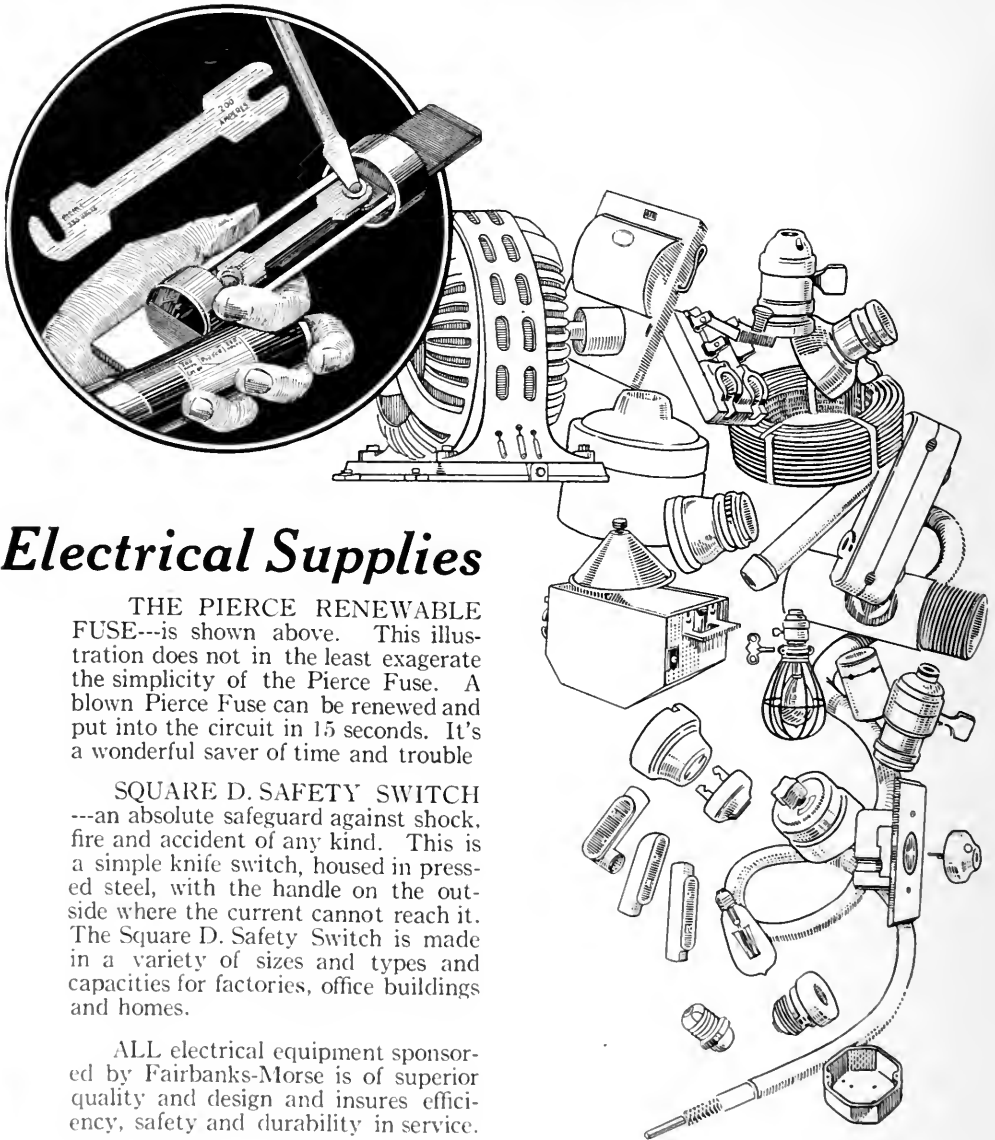
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J. NEWELL STEPHENSON, M.S., Editor.

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# FAIRBANKS-MORSE



# EDITORIAL



## *THE DISCOVERER OF GROUNDWOOD PULP.*

On another page of this issue, there will be found the result of a careful investigation by the London correspondent of the Pulp and Paper Magazine of the right of a Nova Scotian to be considered as the actual discoverer of groundwood pulp. In the Pulp and Paper Magazine for February 15th, 1915, there appeared an article which gave the honor to Charles Fenerty who was born in Sackville, Nova Scotia, in January, 1821, and died in that place in June, 1892. That article shows that there is not very good agreement as to the actual date of the discovery of this process by Keller. Since the appearance of the article referred to in 1915, investigations have been going on and the results are set forth elsewhere.

The Historical Society of Nova Scotia is interested annually in having such an honor properly recognized, and it has been proposed to erect a suitable memorial to the actual inventor of the process which now means the conversion of thousands of cords of Canadian wood into millions of dollars in currency and gives employment to thousands of Canadian workmen in forests and pulp mills. The fact that the working out of the idea on a commercial basis should have been accomplished in Europe because the Nova Scotian's invention was not duly appreciated, offers no excuse for delaying further with preparing a suitable recognition of the genius of Charles Fenerty. Canada, and particularly Nova Scotia, may well be proud that a Canadian was the first to convert wood into paper by a mechanical process, particularly since the application of the great water powers of the Dominion to the product of her forests is the basis of Canada's most important manufacturing industry. Paper men throughout the Dominion should be interested in, and support the proposed memorial to the youth who applied his knowledge and genius to this subject eighty years ago.

Canada had the first sulphate pulp mill on this continent, and probably had the first sulphite pulp mill, and one of the very early, if not the first, commercial pulpwood grinder. Fenerty's invention now gives the Dominion still another claim to distinction; and in spite of Canada being such a young country industrially, we see that the Dominion really comes in very early in the practical application of the principal processes for converting wood into paper pulp. This fact, together with the rapid growth and increasing importance of the industry in Canada, is

cause for pride and should be an incentive to the erection of the memorial to the Nova Scotian who discovered that the mechanical grinding of wood could produce such a fibre as is suitable for paper making.

## *FALSE FEAR OF FINLAND.*

Considerable attention has been given lately, by newspapers, to the growth of paper manufacturing in Finland and the probable effect of extensive purchase of this paper on the American market. The placing of such an order as 40,000 tons is spoken of as quite an event. As a matter of fact this quantity is less than a sixth of the total paper production of Finland although it is approximately 40% of the newsprint production. When this 40,000 ton order is compared with the 2,000,000 odd tons that American publishers consume annually we see that it amounts to only 2% of the total.

While this entrance of Finland into the American market is not particularly significant, as the approach of a rival of the Canadian pulp and paper industry, there are certain lessons to be drawn. The editor had the privilege and pleasure last week of meeting Mr. Hjalmar Gronvik, Managing Director of the Finnish Paper Mills Association, and Mr. Walter Graesbeck, Managing Director of the Finnish Cellulose Association. In the course of a conversation, it was brought out that there are thirty-one paper mills in Finland, producing about 250,000 tons of paper annually, of which 10% is newsprint. There are twenty-four chemical pulp mills with a capacity of about 300,000 tons, and of this amount about 75% is sulphite pulp. In addition there are groundwood mills producing 150,000 tons of mechanical pulp. Mr. Graesbeck estimates that something like 60,000 tons of sulphite pulp will be exported to the United States in 1921. Comparatively little of this is bleached, because of the difficulty of getting bleaching powder. This pulp has earned quite a reputation for its high quality. Previous to the war, when considerably less paper was produced, and in fact the whole industry may be said to have been in its infancy, about 90% of the product went to Russia. Concentration of trade with Russia in those days was due in part to the fact that Finland was politically connected with Czarism, and has resulted in an unfortunate economic effect on Finland because of the comparatively large credits that

piled up in Russia, and which it has not been possible to collect.

The new policy of the Finnish pulp and paper manufacturers is to put their eggs into several baskets, and consequently their paper and cellulose trade is found widely distributed over the world. Their principal markets are England, Denmark, France, Italy, United States, and South America. To most of these countries they have direct steamers. This policy of distributing the product, even though the capacity of Finland's mills should double in the near future, would quite prevent sufficient flooding of the United States with Finnish paper to have any material effect on that market. It must be remembered, however, that the Finnish paper industry is by no means restricted to the manufacture of coarse grades, only we naturally hear more about newsprint than other qualities. Finland produces some excellent tissues and some other specialties, and these will also find their way, to some extent, to this side of the Atlantic.

Canada should not look upon Finland so much in the light of a competitor and rival as in the nature of a friendly co-operator in supplying the ever increasing demand for wood pulp papers. In the accomplishment of this purpose, which is becoming really an obligation on countries possessed of soft wood forests, Canada may well take a lesson from the forest policies of Finland and the other Scandinavian countries. It was mentioned at the Convention of the American Pulp and Paper Association last week, that unless re-forestation and conservation measures are immediately undertaken, newspapers will have to stop publication within fifty years for lack of newsprint paper. Since newsprint paper amounts to less than one third of the paper production of the United States, and probably more than 75% of the paper used in that country is made from wood pulp, we see that future trouble is by no means limited to the newsprint publisher; it means that wrapping papers, book papers, box boards, most grades of sheathing and roofing and all grades of wall board, together with a large proportion of writing papers will be proportionally affected by a pulp wood famine.

We repeat that a country with forests, and no country is more richly blessed in this regard than Canada, has a distinct obligation to see that these forests are conserved so that future generations shall not seriously lack one of the most important contributions to culture and comfort. Finland can teach us a good lesson in the proper care of the forests. Finland, like Canada, must depend in a large measure on the product of the forest to maintain and improve her economic status. To neglect this source of wealth is to invite national bankruptcy. It is most astonishing to us that Canadians have so largely failed to realize the absolute necessity for a proper forest policy for the whole Dominion.

### A SUSPICIOUS "WORLD."

Some people are never satisfied. After the newspapers of Canada have been "saved" thousands of dollars by reason of the Government throttling of paper mills at their instigation, the Toronto "World" says:

"The paper profiteers are trying to keep their courage up by talking of higher prices than ever, and of five-year contracts at six cents a pound! And, while they talk thus bravely, they see things going all the other way. And the Canadian publishers are growing more and more suspicious of those who misrepresented them in previous negotiations. Too many secret deals for their individual advantage are suspected to have taken place, and more than one noble patriot has fallen as a sacrifice to the luring words of the profiteers."

### COBWEBS.

A Chicago dispatch quotes President Sisson, of the A. P. & P. A., as saying the United States will have to conserve paper resources because Canada and Argentina have not enough surplus to spare any great quantity. We fail to see where Argentina comes in as a source of paper while Canada sends the U. S. A. only a paltry million tons or so of pulp and paper, or a meagre 80 per cent. of our production.

A New Brunswick pulp wood operator is quoted as expecting a big slump in pulp wood prices another season, but in the next breath predicts a great curtailment in New Brunswick pulp wood operations. What does he mean?

### THE FUNGI MAN.

By U. B. WISE

Whst! whst! whst! here comes the fungi man  
 He's waiting in the basement and  
     he'll catch you if he can.  
 The room is dark and damp and low,  
 The pulp is soft and wet,  
 And it's all stacked up together where  
     it's hard for trucks to get,  
 And there's *fomes* and *lentius*  
     creepy crawlin' all about,  
 And the *fungolins* 'll get ya if  
     ya don't watch out.

Whst! whst! whst! here comes the fungi man,  
 He's a hairy hoary m'ber of a dark,  
     pulp-thirsty clan,  
 A sneakin' round the beams and joists  
     just waitin' for a chance,  
 And the wetter, and the closer stacked  
     the merrier the dance.  
 For there's *Rosous*, *Mocrotulus*  
     all others all about,  
 And the fungolins 'll get **you** if you  
     don't watch out.

Cheer up! Today is the tomorrow you worried about yesterday, and nothing has happened.

# Ground Wood Actually Discovered in Canada

Fenerty, of Halifax, made Pulp and Paper from Spruce  
in 1838-1839.

By J. R. BOOTH, Special London Correspondent to The Pulp & Paper Magazine.

The poet Péguy once said that in heaven, as he understood it, there was room not only for the artist and the handicraftsman, but also for their works. Charles Fenerty, the Nova Scotian poet, author, and gold digger, may well come within that delectable border region depicted by Péguy, as the real inventor of ground wood and the first man to make paper out of groundwood apart from his artistic and literary ability. Canadians know little of the genius who lived wandering through a magic landscape, perpetually yielding to fresh enticements and discovery of new delights, or taking his mind in a concentration of thought as to what he could best do for the future of the spruce. Forests were dense and they appealed to Fenerty but they just lay beyond the fringes of his dream. Like Shelley, he had found in the "garden" the "Sensitive Plant", and his inventive genius, combined with his knowledge obtained when moving about among the workers of a ragpaper mill near his beloved home, was early at work in the field of discovery. In one of his little poems Fenerty wrote:

Then 'tis sinful to sigh for the joys that are gone,

They were earthborn, untrue, evanescent;

And teach us this lesson, ere yet it is flown:

For the future prepare by the present.

Fenerty was reading the future when he wrote these lines "back in the thirties" and today we hail him in memory as a great man, who made a great discovery, but unfortunately for Canada and her forests, "The West shut down a heavy eye" on him while the watchtowers kindled in the sky. In other words, he became discouraged and his discovery had a new birth in Germany.

## History of Groundwood.

There are many claimants in the field for the first discovery of groundwood or pulp, and I think it will do no harm to enumerate them:

- (1) In 1840 Keller is stated to have introduced the manufacture of mechanical wood pulp.
- (2) Between 1840-1846, Lagrange Bull, of Martinique, made paper pulp from the leaves of the banana tree.
- (3) In 1848 France introduced Keller's invention.
- (4) Groundwood was made in U. S. A. in 1867, but earlier in Germany.

There are books and articles written on the introduction of wood pulp, or groundwood, but the only writer who gives any definite information is Mr. R. W. Sindall, in his work "An Elementary Manual of Paper Technology".

According to German paper and pulp writers Keller, from Hainichen, in Saxony, discovered woodpulp by observing that a piece of wood pressed upon a grindstone was ground into a porridge or pulp of fibre, which when mixed with rag pulp gave a durable and a very extraordinary raw material for producing cheap paper. For his discovery Keller did not receive any reward, financially, and he was discouraged. Another writer says that Keller after watching the formation of cells of a wasp's nest thought of wood as a pulp. When he made his discovery he allied himself to an-

other discoverer with the result known to-day in the paper industry.

The original discovery, as set out by German writers, is interesting, when compared with Fenerty's case; but no one has up to the present date ventured to state that in Germany wood pulp was discovered prior to 1840. Indeed various writers on Keller's discovery are not all agreed as to how it was made and when. Early manuscripts I have seen put his discovery down to the wood pressed upon a grindstone.

## Fenerty's Discovery.

Charles Fenerty, a poet, student, and a young man of great inventiveness, was a constant frequenter of a rag paper mill situated about half-way between Springfield and Halifax (N.S.) and run by a stream flowing into Bedford Basin. Large mills now occupy the site.



CHARLES FENERTY, THE NOVA SCOTIAN WHO  
REALLY DISCOVERED WOOD PULP AND  
TURNED SPRUCE INTO PAPER

It was around this small paper mill young Fenerty came to the conclusion that a change from rags, as a raw material, was necessary for something cheaper. He saw mill troubles; but his hobby was the mill and he played round it like a child would with a puzzle. Like the mill owner, he wanted to make paper and he was classed as a "dreamer".

Undaunted, Charles Fenerty devoted his attention to spruce. He wrote poems to it and in 1838 he turned it into paper. This is the earliest date we have in the pulp industry of groundwood being discovered, and it was only in 1913 and 1914 I discovered the mystery. There is no actual date as to when the groundwood was produced but the statements of those who saw the rough paper put it at 1838. Now, how did Fenerty

make his discovery of groundwood? Let me quote a statement made by one who knew Fenerty, and, who witnessed in those days the result of Fenerty's experiments:—

"As to the date Charles Fenerty made his attempt that was successful at reducing spruce wood to a pulp and making a crude piece of paper on the bottom of a basket of fine material, the nature of a sieve, with the aid of an iron spoon to press out moisture and felt the pulp together, the date was 1838. Later in 1839 when he found he could produce paper he improved his home-made methods and implements until he had paper good enough to send to the publisher of the *Acadian Recorder* in Halifax."

The "dreamer" actually produced pulp from spruce in 1838 and then sent the paper made from it to a newspaper publisher. In Fenerty's discovery of groundwood it will be seen from the early German reports that Keller's, at a subsequent date, was made in a way similar to the Nova Scotian's, viz. by grinding or crushing.

I have made the discovery also that there is today in Sackville a lady who is just 90 years of age, mentally and physically alert—well educated and well-informed—who can trace back to 1839, by a series of events, as the date when her father first inspected paper made from spruce by Charles Fenerty. Her statement has been confirmed from another source, and from my own personal enquiries in Nova Scotia, I attach great importance to it.

The "*Acadian Recorder*" says that Charles Fenerty must be given the credit as the first to discover the art of manufacturing newsprint from the trees of the forest as he doubtless saw the difficulties which the successive proprietors of the old rag mill would encounter in keeping its wheels on the move.

#### Fenerty Finished Paper.

Between 1838 and 1844 Fenerty, who failed to get favor for his discovery, like Keller in Germany, worked at his new hobby, and to draw public attention to it, he sent a specimen of his paper to the proprietors of the "*Acadian Recorder*", Messrs. English and Blackadar (now Blackadar Brothers) with the following letter:—

"Enclosed is a small piece of paper, the result of an experiment I have made in order to ascertain if that useful article might not be manufactured from wood. The result has proved that opinion to be correct for—by the sample I have sent you, gentlemen,—you will perceive the feasibility of it. The enclosed, which is as firm in its texture as white, and to all appearance as durable as the common wrapping paper made from hemp, cotton, or the ordinary materials of manufacture, is actually composed of spruce wood, reduced to a pulp, and subjected to the same treatment as papers in course of being made, only with this exception, viz. my insufficient means of giving it the required pressure. I entertain an opinion that our common forest trees, either hard or soft wood, but more especially the fir, spruce or poplar, on account of the fibrous quality of their wood, might easily be reduced by a chafing machine, and manufactured into paper of the finest kind. This opinion, Sirs, I think the experiment will justify and leaving it to be prosecuted further by the scientific or the curious, I remain, gentlemen, Your Obedient Servant (signed) Charles Fenerty."

This letter proves that Charles Fenerty had a very fair knowledge of paper manufacture, and that when he was working at the production of groundwood in 1838 the knowledge he obtained in the rag paper mill was useful to him—although he never worked in the mill as an employee.

#### Conclusions.

It is unfortunate that some of the early papers relating to Fenerty's discovery are not obtainable in Halifax at present. Since 1914 I have had a keen search made for them, but Fenerty being a much superior man in education and experimental work than Keller, we may assume that in 1837 spruce was in Fenerty's mind as a raw material for paper. In 1838 he was experimenting with it and actually produced wood pulp and paper as the testimony of those who have seen it show.

Nova Scotians very naturally lay the credit of discovering wood pulp on Fenerty. Indeed, they gave him the credit of it long before Keller made his discovery in Germany in 1840.

I understand the Nova Scotia Historical Society also had Fenerty's name before them and there was talk of raising a memorial to his memory at the place where he converted spruce into pulp. The idea has not yet fallen through, as the war in Europe only gave it a temporary set back. Now, if Keller was entitled to the Order of Merit and other diplomas for his discovery in 1840, surely Charles Fenerty is worthy of recognition for his double discovery in 1838. Canadians, and Nova Scotians especially, must not allow the question of a memorial to rest, and if the Historical Society of Nova Scotia is encouraged, I am sure a suitable tablet will be erected.

Keller and Fenerty were in the same boat; they produced wood pulp, Fenerty being the first with it, but they were considered "dreamers" and discouraged.

I have no doubt Haligonians will do their duty to the memory of one who lived among them and whose relatives still occupy a prominent and honored position in the life of the place.

#### LAND SETTLEMENT AND PAPER MILLS.

Speaking at a meeting at Monteith, Ont., Mr. R. A. McInnis, manager of the Abitibi Power & Paper Company, Iroquois Falls, said that few people realized what the pulp industry meant to the North. The Abitibi Co. paid last year three and a half millions in wages alone. Then there were other mills at Smooth Rock, Kapuskasing and so on. In a few years the wages paid annually by these and new mills would run to the enormous total of \$15,000,000.

Another sign of the importance of the forest was the Abitibi Co. had paid in freight to the T. & N. O. in the past year \$950,000 and the other companies in proportion.

The investment in the past three years by pulp companies had been \$60,000,000 in the North country and it was just beginning. That showed the enormous importance of the industry to the North.

Where does the farmer come in? The pulpwood industries must have settlers; they must have produce and labor. First comes the large industry, then must come the settlers; roads are needed. The companies and the settlers must work together. It is useless for the people of the North to act individually. They must first work out a programme for the North and then go to the Government and get what they want.

# Testing of "Kraft" Pulp For Strength

By K. G. WILEN.

Chief Chemist, Wayagamack Pulp and Paper Co., Ltd,  
Three Rivers, Que.

The necessity of testing pulps in general, and kraft pulps in particular, for strength, is too obvious to need any further elaboration.

In the laboratory of the Wayagamack Pulp & Paper Co., Ltd, of Three Rivers, Que., the need of a method for testing pulp for strength became particularly pressing a number of years ago in connection with experimental cooking of pulp, undertaken with the idea of determining the optimum conditions of cooking with regard to the highest strength and best yield of pulp.

The method of testing sulphite pulp for strength published by the Committee on Sulphite pulp of the T. A.P.P.I. in "Paper" November 8th, 1916, was tried out on kraft pulp but proved to be unsuitable in several respects. The proportions of pulp, water and pebbles in a jar of given size, as published by the above Committee, did not give the most satisfactory results as regards heating, and according to our experience the hand mould leaves much to be desired with regard to the uniformity of the hand made sheets. There did not seem to be any obvious reasons for testing the sheets with the Ashcroft tester, as long as the Mullen tester is universally used for commercial purposes. It appeared to us more desirable to express the results of the strength test on a basis which would give a direct comparison with results obtained in actual practice on the paper machines, particularly as the method finally adopted could then be used for placing the blame for any paper not showing the proper test on the pulp mill or the paper mill.

The method of testing pulp for strength which has been followed in the laboratory of the Wayagamack Pulp and Paper Co., Ltd for the last three years is briefly as follows:

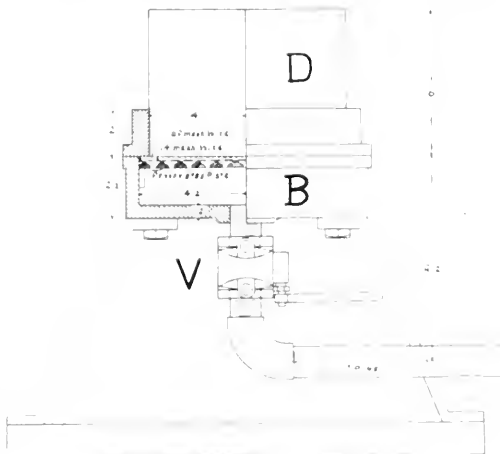
25 grs. of air-dry pulp are thoroughly broken up by forcing the pulp through a screen with 1-16" round holes by means of a jet of water. The screened pulp is then collected on the sheet-machine described below, and placed in a tared weighing cylinder. The contents of the cylinder are then made up to 3 kgs. with water and transferred to the ball mill jar. The volume of the jar is 4.50 litres and it contains 2,500 grs. of pebbles of such a size that there are 250 pebbles in each jar. The pulp is beaten for one hour in the ball mill at a speed of 66 r.p.m. The beaten pulp is then washed out of the jar and made up to 10 litres in a vat from which three measures of 450 ccs. each are placed in a pail and made up to approximately 5 litres with water. After thorough stirring the contents of the pail are poured on to the sheet-machine.

The sheet-machine consists of a rectangular box, the upper surface of which is made of a perforated brass plate. A 14 mesh backing wire and a 60 mesh machine wire are soldered to the plate. When a sheet is made the "deckle box" is placed on the wire. A quick opening gate valve is used for draining the water from the machine. (Fig. 1).

The "coucher" consists of a square block of wood about 10" x 12". The under side of it is curved on a 30" radius. The thickness in the centre is about 1 1/4" and at the edges 1/2."

As soon as the pulp is transferred to the machine the

drain valve is opened and the water allowed to drain off until the suction on the sheet is released by air entering the drain pipe. The "deckle box" is lifted off the machine and the coucher is covered with a wet felt and the front edge of it placed on the wire. The coucher is then pressed down rapidly until the back edge of it comes in contact with the wire. The sheet will then be firmly held by the felt. The felt is next removed from the coucher and placed on a board which fits into a letter press. In this manner 5 sheets are made and placed on the board. The top sheet is covered with a felt and the board is placed under the press. The sheets are pressed for about 15 seconds under all the pressure that can be put on the press by hand. The sheets are then transferred on to wire trays and placed in a drying oven and dried at 180 deg. F. When thoroughly dry the sheets are taken out and allowed to reabsorb the hygroscopic moisture for 1 hour. They are then cut to 6" x 6" and weighed to the nearest .05 of a gram. The weight of the sheets is calculated to lbs per ream of 480 sheets 24" x 36" i.e. the commercial weight-standard for kraft. The sheets



are tested on the Mullen tester in the four corners and in the centre. The average Mullen test multiplied by 100 and divided by the ream weight of the sheets is the expression for the strength of the pulp, in other words the strength is expressed as per cent of "point per pound."

Generally speaking, the results obtained by this method of testing pulp for strength, can be taken as a very fair indication of the strength to be expected from the pulp on the paper machine as long as the degree of hydration imparted to the pulp in the beaters is not materially different from the hydration produced in the ball mill. It is usually only in the case of extra soft kraft bag paper that the relation between the strength of the hand made sheets and the paper made on the machines varies from a definite figure.

In arriving at the above method of testing pulp for strength a number of experiments were made in order to ascertain the influence of the different factors involved, on the final result.

Some of the factors studied were:

- 1) Dryness and methods of drying pulp samples before testing.
- 2) Concentration of pulp in ball mill.
- 3) Weight of test sheet made.
- 4) Weight of pebbles.
- 5) Duration of beating.
- 6) Method of drying test sheets.
- 7) Effect of smoothing wet sheets by pressing between sheets of heavy paper.
- 8) Influence of pressure applied in couching sheets.
- 9) Influence of pressure applied on wet sheets after couching.

The influence of the factors will be discussed in the same order as they are enumerated above.

**DRYNESS OF SAMPLES BEFORE TESTING.**—A

sample of pulp was taken from the vat of a wet-machine when a lap was being made. The lap was then treated as follows: one part of the lap was tested wet, one part of the lap pulp was allowed to dry in the air and another part was dried in the drying even at 210 deg. F. The four samples of the same pulp were then tested for strength with the following results.

Sample from vat . . . . .	1 hour beating	142%
Wet sample from lap . . . .	1 " " "	141%
Air dried sample from lap 1	" " "	120%
Air dried sample from lap 1½	" " "	134%
Air dried sample from lap 2	" " "	137%
Oven dried sample from lap 1	" " "	108%
Oven dried sample from lap 1½	" " "	118%
Oven dried sample from lap 2	" " "	126%
Oven dried sample from lap 2½	" " "	125%

These tests have been confirmed a number of times and show clearly that the method of drying which pulp undergoes before it is tested for strength is of very great importance, in fact, some of the differences in strength obtained by quite radical changes in cooking conditions of kraft pulp proved to be much less than the differences caused by testing wet and dry samples of the same pulp. For convenience in breaking up the samples in the screen wet samples should always be tested whenever possible. The existence of a definite relation between the strength of the wet kraft pulp and the air-dry pulp has not yet been satisfactorily proved by us.

In testing a large number of dry kraft pulps it has invariably been found that these machine-dried pulps are weaker than the average run of wet pulp. While some of the dry pulps in their wet state, are undoubtedly equal in strength to most kraft pulps manufactured, the drying of the pulp on the machines apparently makes dry pulps less desirable than wet pulp when maximum strength is required, both for kraft paper and test board.

Below are given a few tests of dry pulps:

1	124	
2	130	
3	113	beaten 1½ hrs.
4	124	
5	115	

Wayagamaek kraft average wet . . . . . 155 beaten 1 hr.

**CONCENTRATION OF PULP IN BALL MILL.**

The following amounts of pulp were placed in the ball mill jars with the same quantity of water beaten for

the same length of time. The variation in strength is shown below:

Grs.	% Strength
25 . . . . .	148
50 . . . . .	130
100 . . . . .	72
150 . . . . .	52
Unbeaten pulp . . . . .	54

While it is easily possible to keep the quantity of pulp taken constant within 2 or 3 grams in each case, a large variation from the standard weight apparently does not influence the result very seriously.

**INFLUENCE OF WEIGHT OF PAPER MADE.**—

For this experiment a sample of pulp was taken from the flow box of a paper machine when making 41 lb. kraft bag paper, in order to have the weight of the paper made as the only variable.

Weight of paper	Mullen test	% Strength
31 lbs	42	135
65 lbs	95	146
114 lbs	150	132

The strength of the paper made on the paper machine at the time the pulp was taken for the above experiment was 100% of "point per pound". From the above figures it is seen that variations of 100% in the weight of paper made do not influence the results by more than 10%. In actual practice, the weight of the paper made on the sheet-machine is allowed to vary from 55 lbs. to 65 lbs. per ream because repeated tests have shown that no variation in strength occurs with this variation of weight, with the machine used by us. It has been noted that if light weight sheets are made on the sheet-machine thin spots are likely to occur and a low average test results. If, on the other hand, heavy sheets are made they erase in couching and low results again result. From 50 to 60 lb. paper has been found to give the most satisfactory sheets as regards uniformity of formation, etc.

**WEIGHT OF PEBBLES USED.**—A variation of 100 grams in the weight of the pebbles used, with all other factors constant, does not influence the strength of the resulting sheets noticeable.

**DURATION OF BEATING.**—The influence of the time of beating was found to be very marked until maximum strength is obtained but after maximum strength is reached further beating has comparatively little influence. It is of interest to note, however, that the "slowness" of the pulp increases uniformly with the time of beating, even after maximum strength has been reached. The slowness was determined with the Standard Schopper-Klein Sedimentation tester 0.5 gram of pulp in 200 ccs. of water were allowed to drain off for 15 secs.

Beating Time Hrs	Mullen Test %	Sedimentation Test. ccs.
0	68	42
½	135	63
1	161	84
1½	168	103
2	166	120
2½	158	137

It should be noted that after beating for 1½ hrs. the pulp was too "slow" for the ordinary run of commercial kraft paper. Fig. 2 shows graphically the influence of the time of beating on the strength and "slowness" of kraft pulp.

**INFLUENCE OF METHOD OF DRYING THE TEST SHEETS.** Repeated tests made by air-drying 2 sheets and oven drying 3 sheets at 170 deg. F. from the same set of 5 sheets, have shown that oven drying at



170 deg. F. does not influence the strength of the sheets, provided they are left in the air for about 1 hr. after drying.

The following experiment was made in order to determine approximately at what drying temperature the sheets were made from pulp taken from a paper machine. The sheets were then treated as follows :

(-) 3 sheets were dried in a drying oven and the temperature was then raised to 240 deg. F. for 15 minutes. The sheets were immediately tested.

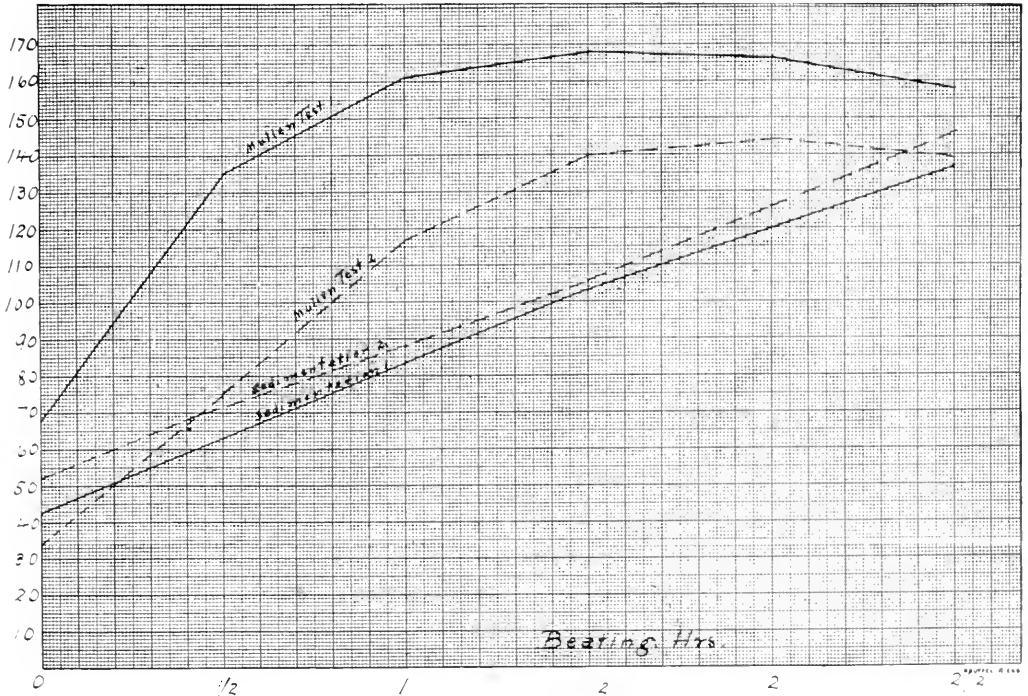
(2) 3 sheets were dried and heated to 240 deg. F. for 15 minutes and left in air showing a relative humidity of 60% at 80 deg. F. for 16 hrs. before testing.

(3) 3 sheets were dried at 214 deg. F. and tested after being exposed to air with 60 p.c. relative humidity at 80 deg. F.

(4) 3 sheets were dried at 180 deg. F. and tested after being exposed to air with 60% relative humidity for 1 hr.

**INFLUENCE OF SMOOTHING WET SHEETS BY PRESSING BETWEEN SHEETS OF HEAVY PAPER.**—Attempts were made to improve the surface of the sheets by pressing them between sheets of heavy paper, but this procedure was found to increase the strength of the sheets very considerably, in some cases 25 to 30 points in 150. The smoothing had to be abandoned, however, on account of the irregularities in the increase of strength produced. To date no satisfactory explanation of these irregularities has been found.

**INFLUENCE OF PRESSURE APPLIED IN COUCHING SHEETS.**—In designing the sheet-machine the wire was purposely placed 1-16" below the edge of the box and the coucher made 2" wider than the box in order to minimise the effects, if any, of uneven couching pressure. With the machine as made, no difference has been found in strength of the sheets when they are couched off with the least pressure which will lift them off the wire and when they are



(5) 3 sheets were allowed to dry in air with 70% relative humidity at 80 deg. F.

Sheets	Strength %
1	100
2	126
3	150
4	150
5	152

It would thus appear that the sheets are not weakened by drying in the drying oven at temperatures below 200 deg. F. Drying in the oven at this temperature requires about 20 minutes, which means a considerable saving of time compared with the time required for air-drying, even when using a fan.

taken off with all the weight a man can place on the coucher.

**INFLUENCE OF PRESSURE APPLIED TO WET SHEETS BETWEEN FELTS.** The effect of the pressure to which the sheets are subjected between the wet felts was studied while varying the pressure from the lowest pressure which would remove enough water from the sheets to enable them to be handled, to the pressure exerted on them in a 500 ton baling press. No variation in strength was noticed within the range of pressure obtainable with a letter press, but when the full pressure of the baling press was exerted the strength increased about 12%. It is of interest to note in this connection that the sheets pressed with the

baling press showed a parchmentizing effect and were nearly transparent.

#### Conclusions.

As far as this method of testing pulp for strength has been investigated by us at the present time it appears to give a true indication of the strength of kraft pulps. A number of samples of sulphite pulps have also been tested by this method although the time of beating has been shortened to  $\frac{1}{2}$  hr. for sulphite, as sulphite pulp hydrates much more easily than kraft pulp. In general it has been found that different grades of sulphite pulp show a much greater variation in strength than sulphate pulps. The difference in strength of the strong and the easy bleaching sulphite pulp, made by a large Canadian concern showed a difference of about 45%, while the difference between the strongest kraft pulp and easy bleaching sulphate pulp is only about 20%.

Kraft pulp is at present used not only in the manufacture of pure kraft papers but also in the making of various other grades of paper and board. It becomes particularly important to have a standard method for testing pulp for strength when mixtures of pulp are used because then the finished paper does not furnish any indication of the strength of any one of the pulps used. An acceptable method for testing of strength of pulp must, of course, give concordant results on a given sample of pulp and as far as our experience with the method described above goes, there is no difficulty whatever in duplicating results within 2% even when the tests are made by 2 or 3 different operators.

The time required for a test is approximately  $3\frac{1}{2}$  hrs. and with a 4-jar ball mill 15 samples have been tested by one operator in 10 hours.

Several attempts have been made to establish a relation between the time of beating and the Mullen test and the breaking length, as determined with Schopper's machine, but so far no entirely satisfactory relation has been found.

Our object in publishing our experience with this method of testing pulp for strength is to obtain all possible constructive criticism of it, as the question of strength of pulp is of such importance to the industry in general that it merits all possible cooperation in order to establish a standard method.

In conclusion the author wishes to acknowledge his indebtedness to Mr. A. E. Sjöman for many valuable suggestions regarding the design of the sheet-machine and for the careful manner in which the experimental work was carried out.

#### HEAVY CHEMICALS.

This market generally can be described as a buyer's market. New contracts are due for renewal and both parties are reticent. Dealers expect a little stiffening early in the new year as buyers' stocks on hand diminish.

**Soda Ash** is not being quoted on the Canadian Market, but new contracts will likely follow the New York trend slightly downwards.

**Bleaching Powder** is notably weaker and new contracts will likely be made round 4c. or  $4\frac{1}{4}$ c. if not lower.

**Alum**—Supplies of bauxite are moving better and there is a downward tendency.

**Caustic Soda** follows more or less along the lines of soda ash.

**Salt Cake** appears to be stiffer if anything on both Canadian and United States markets.

#### ADVISE HARDING ON FOREST POLICY.

The importance of paper as a trade commodity, plans for a conservation campaign and suggestions for a new national forest policy were the leading features brought out in the course of discussions at the convention of the American Pulp and Paper Association at Chicago last week. Touching on the fact that paper daily is becoming a great deal more of a factor in the affairs of the world, George Olmstead, of the J. W. Butler Paper Company, pointed out the need of increased production to meet the growing demand and cited figures to show the increasing needs. He declared that in the last five years \$600,000,000 has been spent for newspaper advertising, and \$300,000,000 for magazine advertising. Preliminary plans for a paper conservation campaign, with "avoid waste and conserve scraps" as the slogan, were made at the opening session Thursday, Nov. 11. President G. W. Sisson told the convention that prices on paper are not likely to drop for some time. He said that the industry was in better condition financially than many other industries, but lack of surplus stock would make price reductions impossible. Mr. Sisson also said that the United States would have to depend on its own resources for paper because Canada and South America countries lack the surplus necessary to supply the country with any great quantity. In reports read to the convention a new forestry policy for Harding's administration was recommended. The Federal Government is preparing to spend \$50,000,000 on forestry in the next five years in addition to large amounts to be expended by individual States, it was said. The reports urge acquisition by the State and Federal governments of forest land and land for reforestation. Extension of Federal supervision of State and private forests and a single unified system of reforestation under Federal control, are other measures advocated. The pulpmakers also propose that no State or Federal taxes be collected on forest lands until cutting of the timber begins, and that the tax then be placed on the lumber. This, it was claimed, would stop the cutting of young timber to pay taxes. In urging this program, President Sisson declared that newspapers will have to stop publication within fifty years for lack of print paper unless reforestation and conservation measures are taken at once. Paper board manufacturers met in connection with the convention, Thursday, and discussed the business credit and labor situation.

In a recent bulletin sent out by the United States Forest Service, the belief is expressed that the turning to Alaska on the part of pulp and paper manufacturers seeking a new source of pulpwood, will not only hasten the development of the Territory but will greatly stimulate timber sale business on the two national forests within Alaska. Officials records show that during the last fifteen years more than 440,000,000 feet of timber have been sold from the Alaskan national forests. Including the fiscal year ended last June a total of \$178,918.98 has been received by the Territory from forest business since the establishment of the two national forests.

The Lagerloef Trading Company, of New York, continues to receive cargoes of wood pulp from Finland. Inquiries at the Lagerloef offices in New York City, revealed the fact that 6,414 tons of chemical pulp and 745 tons of mechanical pulp were brought in from Finland by this concern through various ports on the Eastern seaboard since August 17.

# What the Forest Products Laboratory can do for the Paper Manufacturers

By OTTO KRESS, in charge Section of Pulp and Paper,  
Forest Products Laboratory, Madison, Wis.

Wood, under present American economic conditions, is the only logical raw material for pulp manufacture. The various crop fibres which are frequently suggested as substitutes for pulp wood, such as cotton stalks, corn stalks, sugar cane bagasse, the various straws, etc., have from a pulping standpoint the following disadvantages.

1. These fibres represent seasonal crops of a very bulky nature, thereby requiring large storage facilities to enable the pulp mill to operate throughout the year.

2. These plant fibres contain either a large percentage of pith or in the case of straws a high percentage of silicious material which consumes excessive cooking chemical and gives low yields of pulp. Further, in view of the bulkiness of the plant fibres the digester charge is reduced, thereby reducing the yield of pulp per cook.

Certain of the plant fibres, such as cotton hull fibres and second cut cotton linters and possibly, flax tow, can be used in large tonnage for the production of certain papers, as for these fibres the cost of treatment will be relatively low in comparison with the quality and value of the stock.

In Europe, plant fibres, such as esparto, the straws, etc., are largely used for pulp purposes but American conditions are such that wood has been and probably will continue to be, the basic raw material for the paper industry so that plant fibres offer no immediate remedy for the threatened shortage of pulpwood.

The Forest Products Laboratory is a Federal research institution established by the Forest Service in co-operation with the University of Wisconsin, at Madison, Wisconsin, to study the best means of utilizing our forests and forest products. The Section of Pulp and Paper is completely equipped with semi-commercial apparatus for the pulping of all woods by the soda, sulphate and sulphite processes, and with an experimental paper machine for the conversion of the pulp to paper. A study has been made of practically all the possible American woods to determine their suitability for pulp and paper production. According to the latest statistics on pulp wood consumption, the four important pulpwoods, spruce, hemlock, balsam, and aspen, comprised 83.1 per cent of the total wood consumption. By a careful study of the best means of reducing woods, thought in the past to be unsuitable for pulping purposes, it has been found that several such species can be used for pulping, thereby increasing our available supply of pulp wood.

As a ease in point the laboratory is attempting to pulp the various species of Southern pine by a modified sulphate process in order to produce a stock that can be bleached with a reasonable bleach consumption, and semi-commercial experimental work indicates that this can be accomplished. If this is proved by further laboratory work and finally by mill scale trials, it opens up the possibility of utilizing Southern pines and gum woods, of which large stands are available in the South, for book paper production. By Southern pines we have

reference to the quick growing second growth pines, such as loblolly, pitch, scrub, etc., rather than the true longleaf or shortleaf pines, which are rapidly being cut out in the South.

There is no need of dwelling on the coming pulpwood shortage in the East and the effect of the ever increasing scarcity and shortage of pulpwood on the established Eastern Mills. The pulpwood supply of the future in the United States lies in the South in the form of the various Southern pines and gums and in the Northwest where are found many species suitable for all kinds of pulp production. Large tracts of timber have been set aside in the West by the Federal Government to be administered and used under the direction of the Forest Service.

These National Forests, of which there are some 150, comprise 156,000,000 acres which contain about one-fifth of the standing timber of the United States. This timber is subject to purchase under certain specified conditions of cutting. In sales involving large initial investments it is the policy of the Government to include in its sale sufficient timber to justify the investment. The Government stands the expense of surveying, mapping and appraising the tracts applied for and the appraisals aim to set a stumpage price which will allow the purchaser a reasonable return upon the operation. Government contracts do not require that the timber be paid for as a whole. They permit payment to be made in specified deposits from time to time as the timber is cut, thus relieving the operator from having much money tied up in stumpage. He is likewise relieved from taxes and the expense of fire protection, except in cases of emergency. One of the functions of the laboratory is to obtain detailed information covering the value and use of these Western woods, many of which are not being pulped at the present time.

The pulp mill industry unlike the sawmill industry represents a very heavy investment so that on depletion of the surrounding timber supply, pulpwood has to be brought to the mill from ever increasing distances and at increased costs. While the entire supply of the Eastern pulpwood has been very sadly depleted considerable saving can be effected by proper technical control, and it is along this line that the Forest Products Laboratory can be of the greatest assistance. The following are a few of the problems that the laboratory is studying but in the active prosecution of which they are hampered by a lack of funds.

## Causes and Prevention of Possible Wood and Wood Pulp Infection and Decay.

In view of the ever increasing cost of wood the pulp and paper industry in competition with the lumber and other wood using industries must largely purchase and use the culls and inferior stock not suitable for other purposes. This means that the pulp mill will receive in the future an increasing percentage of partly decayed wood which on storage, unless precautions are taken, will rapidly deteriorate. The laboratory in conjunction with a number of interested mills that are financing the work has been studying this project for a little over a year, and the results indicate that there is an appalling loss from decay of groundwood pulp and of

\*Address delivered before the American Paper and Pulp Association, Chicago, November 13, 1920.

wood in storage. For example, a recent mill scale grinder run on partly infected mill run spruce showed a decrease of 390 lbs. of groundwood pulp per cord of infected wood in comparison with the yield per cord of sound wood. Equivalent losses are experienced in the chemical pulping of partly infected woods. Time does not permit to go into details but by proper storage it appears as though the bulk of this loss could be prevented.

#### The Purchase and Use of Wood on a Weight Basis.

The present method of purchase and use of pulp wood on an indefinite cord or volume basis has certain decided drawbacks. Recent mill scale studies conducted by the laboratory in conjunction with the Newsprint Service Bureau, resulted in the development of suitable means for the rapid and accurate sample of wood delivered to the mills in cars. The purchase and use of wood on a weight basis would have the following advantages.

1. Eliminate the uncertainty of the purchase and use of wood on the present indefinite cord or volume basis.
2. As wood during decay suffers no change in volume but does decrease decidedly in weight, the purchase and use of wood on a weight basis would automatically allow for the percentage of rot in the wood. The present method of attempting to scale out rot according to our observations is decidedly inaccurate.
3. The purchase and use of wood on a weight basis would place the mill cost accounting system on a logical basis between wood as the raw material which is now bought on a volume basis, and pulp and paper the finished product which is sold on a weight basis. This would also tend to avoid over and under runs on the periodical inventory of the wood supply.

#### The Chipping and Baling of Pulpwood

Some work has been done on the chipping, drying and baling of pulpwoods, which indicate that additional study might demonstrate the feasibility of this project for supplying mills with wood in baled chip form shipped from such distances as would not permit the shipping of round wood. Aside from the possibility of supplying the mill with wood from a larger radius the use of dry chips with the elimination of the wood storage and its subsequent braking and chipping offers decided advantages.

#### The Use of Wood Waste.

The use of mill waste, such as slabs and edgings, is steadily decreasing, caused probably by the mechanical friction tires experienced in the barking and chipping of such wood. For example, in 1918, slabs and other mill waste comprised 151,603 cords, or 2.9 per cent of the total wood consumed, while in 1909 such waste amounted to 218,977 or 6.2 per cent of the total wood used. A study should be made of the best means of the mechanical barking and chipping of mill waste in order to utilize the same for pulp manufacture.

The above mentioned problems are sufficient to inaugurate the field of work that the Forest Products Laboratory attempts to study. Through the proper co-operation between the industry and the laboratory a considerable saving and conservation of wood might be made. It is a peculiar but true condition that the industry pays far more attention to the purchase of the less important raw materials, such as sulphur, coal, limes, alum, etc., etc., than to wood, which is the basic raw material of the wood pulp industry.

Co-operate on is conducting yourself so that others can do with you.

## HOW THE CANADIAN WOODLANDS SECTION STARTED.\*

In 1916 Mr. Carl Riordon introduced a resolution at the Annual Meeting reading as follows:

"RESOLVED that there should be promoted a new section in this Association somewhat similar to the Technical Section to deal with the whole question of the production of wood for the making of pulp and paper."

It was found impossible to take any active steps in this matter until late in 1917 at which time a meeting was held in Montreal at which were represented most of the prominent pulp and paper companies and at this time Mr. Riordon outlined his views in bringing the men together who were responsible for the production of the most vital raw material in the pulp and paper business.

Mr. Ellwood Wilson also said in part:

"The cost of cutting is increasing. Lumbering operations are now back so far that the hauls are very long. We are using the same methods that were employed 25 and 50 years ago, and new machines such as gasoline log haulers, cutting machines, etc., have not been introduced, as they should have been if the ingenuity used in the mills had been applied to the woods end."

Mr. Wilson also said:..

"We must use the material we have to the best advantage. This involves the lumbering and utilization of the wood that will not float. The forest is reverting to hardwoods wherever they will grow which will absolutely shut out and prevent the growth of a future supply of conifers unless we find means of getting the hardwoods out and using them so as to give the conifers a chance."

At this meeting also spoke Mr. A. B. Reeknagel, the head forester to the Empire State Forest Products Association. In his talk Mr. Reeknagel outlined what he had to contend with on taking up his work in connection with the Association. How it was necessary to make an inventory of land to find out what character of land was owned by the members. How it was necessary next to make an inventory of developments showing the character of improvements, the annual consumption in raw material, the output of finished product, the number of men employed, water power developed and similar data. In the course of his remarks, Mr. Reeknagel emphasized the fact that the Adirondacks most pressing problem is that of utilizing hardwoods and that they had inaugurated a hard wood utilization study that is aiming to bring together suggestions for improvement in utilization and a study of wider markets for hard woods.

Another topic on which Mr. Reeknagel spoke at some length was the subject of legislation, publicity and education. To use his words:

"Nine tenths of the problem is to educate the public to a realization that lumbermen are not vandals, thieves and pirates, but a necessary part of the economic machine. The old saying "Woodman spare that tree" must give place to "Woodman use that tree" and that the public must learn that forests do not improve by disuse any more than a man's muscles grow stronger in idleness."

Following the inauguration meeting the first general

\*Address by Mr. A. L. Dawe, secretary of the Canadian Pulp and Paper Association, at the organization meeting of the Woodlands Section of the American Paper and Pulp Association, Chicago, Nov. 11-12, 1920.

meeting of the Woodlands Section was held in February of 1918 at which some very excellent papers were read by prominent men among the paper manufacturers, and which was followed by a general discussion which was entered into by most of those present.

Papers were also read on the use of tractors and other machinery and it was felt that the first meeting was a very good start.

A meeting was held in the fall of the same year which was very much more widely attended and at which a great deal of valuable work was done by way of pledging co-operation with the Government on investigations into destruction of trees by insects and fungi. Resolutions pledging the support of the Section to the Commission of Conservation and the appointment of special committees to look into the matter of hard wood and standing committees on improvements in logging methods.

Further meetings were held in the beginning of 1919 and a Fall Meeting was held later at the Government Nurseries at which time a general discussion on the work of the Forestry Department of the Province occupied a great deal of the time. Visits were also paid to the nurseries at nearby mills.

This was followed by the fourth annual meeting of the Woodlands Section at the beginning of this year at which a detailed report was made regarding improvements in logging conditions and a series of very interesting papers including one on the use of hydroplanes in protecting and surveying forests were read.

In order to hold our members together we found it advisable to draw up a set of by-laws to govern the conduct of such section, copies of which I have pleasure in presenting to you for your attention.

It is, I think, quite desirable that Canada and the United States should work very closely together in our Woodlands problems. They are the same on both sides of the line and we, on our side, would welcome the opportunity of co-operation between the two sections even as we have had the privilege of working with the Technical Association of your industry. This co-operation has enabled us to bring out what will eventually be one of the most complete text books of any industry that has yet been published and the accomplishment of these text books will be a direct tribute to a great deal of unselfish work on the part of mill owners and Technical men on both sides of the border.

#### MUCH INTEREST SHOWN IN PULP LANDS IN BRITISH COLUMBIA.

Just now it is impossible to secure definite information in regard to just what is transpiring as to the proposed erection of new pulp mills in British Columbia, but if there are any legitimate plans on foot for the erection of plants, then the estimates that are being secured from the several machinery houses and supply firms will amount to some nice business for these firms in the near future. The writer has been endeavoring to run down the many rumors of increased facilities at some of the old plants, and finds that in one instance there is a change being made in boilers at the Ocean Falls plant, but no increased capacity is being provided. The identity of the parties who are securing estimates for the erection of new plants, is being kept very close. It is hoped that the development will take place as it means just so much more prosperity to British Columbia.

## British Trade News

(From Our London Correspondent)

London, Nov. 2, 1920.

The award of the Industrial Court in connection with the rates of pay for juniors doing the work of adults in papermaking has been issued. The Amalgamated Society of Papermakers and the National Union of Printing and Paper Workers applied that a junior called upon to do the work of an adult should be paid the rate for an adult whether the junior had attained the age of 21 years or not. The Court has decided that the juniors concerned should be paid the following minimum rates: Shift workers at the age of 18 yrs. 1s. 5d. per hour; at the age of 19 yrs. 1s. 6d.; and at 20 years 1s. 8d. Day workers aged 18 yrs. 1s. 4d.; aged 19 yrs. 1s. 5½d.; and aged 20 yrs. 1s. 6½d. per hour. The rates for Scotland, Wales, Ireland, and the West of England to 3½d. less per hour.

#### More Money Called For.

The National Paper and Pulp Company (1920) Ltd., has made an issue of £200,000 eight per cent. First Mortgage Debentures at 98 per cent. redeemable at 103 per cent., and 150,000 ordinary shares of £1 each at par. The Company has been incorporated to take over and acquire as a going concern as from June 30th last. The two mills and Kings Paper Mills, all situate at High Wycombe, in Buckinghamshire and the extensive warehouses in London together with the good will of the National Pulp & Paper Company Ltd.

There are 3 paper machines, one being built this year, and an 80 inch one is being put in to replace a 60 inch machine. Messrs. Bentley & Jackson built the machine and it is complete with many new improvements. These mills will in future turn out rag papers, double crown carbon tissues, copying tissues, banks, blottings, etc. etc. The driving power of the mills has recently been almost entirely replaced by generators and motors. In a statement I have seen by the auditors, I notice that a large part of the output of the mills has been sold forward for three years on a remunerative basis as there are only three other mills in England making tissues, and the demand has exceeded the supply for home and export account.

British mill owners have small supplies of coal on hand and they can exist for another couple of weeks. Some mills have had to close down to conserve their supplies, but the newsprint mills were kept going to keep supplies regularly for the important newspapers they feed. In cases where newsprint mills were not worked, short time was adopted in working hours or the mills were closed 3 or 4 days in the week. That is the procedure at present and it will go on until the Government see their way to withdraw their special Order bearing on the control and distribution of coal in industries.

Consumers of newsprint have now failed in their effort to pull down the prices of newsprint. Some cheap foreign newsprint found its way into the market and immediately the news was heralded far and wide that there was a drop in price. This week no one hears anything of a reduction. Some of the consumers thought they would use the coal strike as a weapon to back up the floating round of the cheap foreign newsprint in the market, but sellers realised what the "little game" was and there was no wavering on their part. Indeed, it was impossible for them to waver owing to the cost of production and the market

not being overstocked with newsprint at present. I fail to see how Canadian, English, or Scandinavian paper can be eased in price today. So far as Scandinavia is concerned no coal is at present being exported to mills there from England, as export is prohibited by the Government, prices, may therefore be affected. One of the journals published for newsprint consumers states that "Canadian pulp and paper prices are believed to have reached their limit and they may begin to fall."

The imports of newsprint for the nine months ending September last, compared with the corresponding period in 1913 were as follows:

	1913—cwts.	1920—cwts.
Sweden	447,825	407,044
Norway	902,730	505,776
Germany	353,820	114,965
Belgium	70,938	13,977
U. S. A.	62,024	56,446
Newfoundland	630,880	669,885
Other Places	211,916	776,623
Totals	2,680,133	2,544,716

It will be seen from these figures that Newfoundland has turned out to be Norway's serious rival in the British newsprint market. It is significant that Canada is included in "Other Places."

With less supplies of newsprint one may ask how the British mills are affected by the strike? The answer is: British newsprint mills are running short working weeks. The coal strike has caused all British paper mills to suffer loss and the paper market is disorganized, when at normal times it would be going through a period of prosperity at this period of the year.

#### Pulp Situation.

If the paper market is paralysed, it may follow that the pulp market is in a similar position. Pulps are at a standstill just now. When we get the coal strike settled buyers will be looking round for 1921 business. Good supplies are reaching England from Canada.

#### Indian Bamboo Pulp.

During recent years there has been much research work into the uses of bamboo as a paper pulp and articles have appeared on the subject in the "Pulp and Paper Magazine". According to Indian statistics there are now two mills in India making pulp from bamboo—one in Calcutta and the other in Burma.

#### Canadian Exhibit For London.

The Great Advertising Exhibition will open in London on the 27th November. It will be one of the finest expositions of its kind in the world and King George is to patronise it. I understand Mr. G. R. Hall Caine, who sometime ago visited Canada, is acting as chairman of the sub-committee of the paper section and he is arranging to get from Canada an exhibit which will show the process of pulp manufacture and the process of paper manufacture. Considering that so many buyers of pulp turn to Scandinavia, this is a high honor for Canada and incidentally it will demonstrate the great resources of the Dominion.

#### The Dye Problem

As the dye industry is one of the "keys" to British national trade independence, the Prime Minister, I am told, is not at all unlikely to consider, and propose before Parliament, special measures, to protect the achievements of our chemists and manufacturers since 1914. We were a generation and more behind the Germans and with Government encouragement our

research laboratories and factories did wonders in a brief time. But their pre-war superiority and their war-time progress leave the Germans still very dangerous competitors and, in fact, they can export the stuff so cheaply and in such variety that the English industry might be killed if it were neglected.

#### Newfoundland Oils.

Mr. Alfonso Toft has an exhibition here of Newfoundland scenes in oils, which he painted in the neighborhood of Grand Falls amid spruce, fir, and silver birch. The exhibition is attracting much attention.

#### Notelets.

Papyrus pulp samples are reaching England from South Africa.

Cardboard sweet boxes from Germany are sold in London 1-5 below the cost of British products.

The stationers are starting their social events for the winter in London. They usually dine well, dance well and speak well—but not on trade secrets.

#### FUTURE PAPER PRICES.

The American Writing Paper Company has preferred to accumulate certain reliable and fundamental data which all in the industry may use in forming opinions based on facts, rather than to assume the responsibility of predicting the future prices of paper. Above all, we would not wish to state that any price recessions in fine papers will occur in the next few months.

The safest course for merchants and printers is probably to keepably to keep inventories moderate, but not so low as to interfere with sales. If service is not rendered to the printing fraternity who constitute such an active force in developing sales, we cannot, of course, obtain our full meed of business. Inventories all along the line must therefore meet the demand and in fact must anticipate it. A boom in business following the November election would certainly accentuate the present shortage of paper.

We believe the key to the present situation in the paper industry is in the hands of the customers of paper. Any considerable decrease in the volume of correspondence, advertising, or printing, would doubtless bring some reductions, in time, in the prices of the raw materials used in paper-making and in the prices of paper. Nevertheless, pulp, coal, rags, and labor are obstacles to any reductions that are formidable, and, in our opinion, are ruling factors. The paper industry seems to be in a healthy condition at the present time. There has been no overproduction and there is no accumulation of stock. There has been no over-expansion in productive capacity. We believe the industry can face the immediate future with confidence.—American Writing's Paper.

(Complete copies of the above report may be obtained from the Statistical Department of the American Writing Paper Company, Holyoke, Mass.).

#### A GOOD WORD FROM THE UNION.

So much noise is made about the occasional dissatisfaction between mill management and men that we are glad indeed to quote the following peaceful paragraph from the Federationist, Vancouver:

"Quatsino, Camp 7, Whalen Pulp & Paper Mills.—There are 40 men working here. Practically all union. Camp mostly a pulp proposition. Conditions are good. Free blankets; shower baths; all single bunks. The Ordermen have been cooking here for eight months. Something of a record for cooks in this country. They can cook.—Delegate 689."

# Economic Utilization of Heat and Power in Paper Mills

By Wm. ADAMSON.

(Continued from last issue.)

**POWER DISTRIBUTION IN THE MILL.** — The most efficient generation of power can be very readily rendered ineffective by an inefficient method of distribution. A consideration of the methods in use will therefore be of interest. Electric driving has been extensively adopted in the paper mill, especially for the scattered auxiliary plant; and in the case of new plants, the adoption of all-electric driving deserves careful consideration, especially so when the extraction type turbine is being installed as the main power unit. With this method of power distribution, the whole of the generating plant can be centralized in one power house adjoining the boiler plant. Here, the electrical energy is generated and is distributed by insulated cables to the various motors in the mill. This makes a very flexible scheme of power distribution, which is under perfect control. Many of the machines in the mill may be individually driven, while others could be grouped and driven by a single motor through ropes, belts, shafting or gears. The question of whether the current should be alternating or direct, is a matter open to discussion. If the all-electric scheme is adopted for driving the mill, A. C. current should, undoubtedly, be employed, as the greater portion of the power load will be at constant speed. Up to a few years ago, it was impossible to obtain variable speed A. C. motors, and it was necessary to transform to D. C. current for the variable speed work of the mill. It is now possible, however, to obtain very efficient and reliable variable speed A. C. motors; but as yet, these have not been developed on a commercial scale to give a speed range greater than 3 to 1, and this range is not great enough for the driving of some paper machines. In the case of mills using a steam engine with lineshaft drive for the preparation plant, then D. C. current for the paper machines and auxiliary machinery is probably more convenient, owing to its variable speed feature and to its generally slower speeds. On the other hand, however, there is commutator trouble and the up-keep is greater than with motors with A. C. current. As a class, A. C. motors run at higher speeds than D. C. motors, and have less wearing parts; but have inherent power factor trouble, which while not affecting the running of the motor, necessitates a greater generating unit. A. C. motors, therefore, should be run continuously at their full rated load, if possible, so as to keep a good figure for the power factor of the plant. The turbo alternator is best suited for large installations of the A. C. type, as it requires less care and maintenance cost than a D. C. generator, but if the electrical load is not very great, a geared turbine driven D. C. generator will make a very serviceable and economical unit, especially if this turbine be of the mixed pressure type, using the excess exhaust steam from the compound non-condensing engines on the machines and heater shafting. With the "all-electric" system of driving, there is a double transformation of energy between the prime mover and the paper mill machinery, viz:—(a) the generation of mechanical energy in the turbine or engine; (b) the transformation of this

energy into electrical energy; (c) and the regeneration of mechanical energy by the motors in the mill. The efficiency of (b) often reaches 93% and of (c) 90% at full load. Many of the motors used in paper mills can show a fairly high efficiency, in some cases as high as 90% at their full rated load. Lineshafting and belts throughout a paper mill cannot improve on this efficiency, even when in perfect alignment, and if there should be any want of alignment, the power necessary to drive the shafting considerably increases. In some mills the alignment of the shafting, condition of the bearings and the design of the drives are so bad, that a large amount of power is unnecessarily wasted in friction.

There is no disputing the fact that electric machinery is more complicated and expensive, and requires more attention than the mechanical; and if it be neglected to the same extent as is generally the case with the mechanical equipment, the results, both in reliability and economy, would not compare with the latter. Thus, unless electric machinery can be guaranteed every attention, it is as well to make use of lineshafting wherever possible, say to drive beaters and breakers; and to drive other parts of the plant, such as super calenders, re-reelers, cutters, etc., by electricity.

## Economics.

So far, we have considered general principles only, but it would be interesting to apply the conclusions arrived at to practical mill power and heat problems. Suppose, for example, we take a 4-machine mill for the manufacture of news print paper from wood pulp. The plant for a news mill has now been worked out to something like finality, and Table 2 gives the heat and power requirements of the mill.

**Scheme 1.**—Compound steam engines for driving the preparation plant, the constant and the variable speed portions of the paper machine. The electrical load of the mill is supplied by a 500 K.W., D.C. mixed pressure geared turbo generator, arranged to run either as a high pressure machine, or under mixed pressure conditions, using the excess low pressure steam from the mill. Table 3 shows the steam and power requirements of this scheme.

(Included in Mr. Adamson's manuscript were two blue prints, showing diagrammatically, the arrangements described as Scheme 1 and Scheme 2. Blue prints cannot be reproduced by photo-engraving.—Ed.)

**Scheme 2.**—The alternative scheme of driving is the "all-electric" drive, with extraction type steam turbo driven alternator. The steam and power requirements are shown in Table 4. Only two alternative methods of driving have been compared. It is possible, however, for the mill to be driven in other ways, and other modifications of the methods shown, e.g. instead of the mixed pressure turbine being used in Scheme 1, a high speed steam engine driven D. C. generator could have been installed. This, however, would not have shown a greater economy in steam consumption when using high pressure steam than the mixed pressure turbine; and it is quite unable to use the excess exhaust steam available from the mill in such cases as when felts are being washed, etc. In a case like this, the excess steam would have to be blown away to the atmosphere, and

only a part of it could be saved by use in the feed water heater.

In the figures for these two schemes, it will be seen that the total steam required for driving the machine and preparation plant (16,000 lbs. per hour) is equal to the amount of steam required for heating the drying cylinders and for the hot air plant. Thus, the power required to drive this part of the mill plant is obtained, as it were, as a "by-product." In practice, however, the amount of steam for drying and that passed by the engines would not exactly coincide, so that in the one case live steam would have to be used as a "make-up," and this should preferably be used in the hot air plant; and on the other hand, when steam passed by the engines exceeded that required for drying, this excess steam would be used in the low pressure stages of the mixed pressure turbo generator. In choosing the best scheme for the driving of a paper mill, other factors must be taken into consideration: Reliability, as previously stated, comes first of all, but initial and maintenance cost must also be fully considered. As regards reliability, Scheme 1, may, without hesitation, be considered more reliable than Scheme 2, for this reason. If anything goes wrong with the steam end, the electrical end, or the condenser end of the main power unit in Scheme 2, the whole mill will be shut down, unless there be a complete "stand-by" unit; whereas, if a similar thing should take place in Scheme 1, the greater portion of the mill can keep in efficient operation. Again, the compound engines in Scheme 1, are equally as reliable as the motors in Scheme 2, so that if one of them fails, it will shut down only that particular machine, and not interfere with the rest of the plant. As regards initial cost, there is no doubting that Scheme 1, is considerably cheaper than Scheme 2.

**Alteration to Driving Arrangement of an Existing Mill.**

Suppose we consider what economy could be obtained by altering the driving arrangement of an existing mill, e.g., let us take a 4-machine news mill of the same size as before, where the machines are driven by simple expansion non-condensing engines, passing the steam into the drying cylinders, the "make-up" being supplied by live steam. The breakers and Jordans are driven from a lineshaft in the basement, which in turn is driven by means of ropes from a cross compound horizontal condensing steam engine. The electrical load of the mill is obtained from a 500 K.W., D.C. generator driven by ropes from the lineshaft. The steam requirements for this plant are shown in Table 5. If the simple expansion engines on the machines be replaced by compound engines, and if the main engine be converted from condensing into non-condensing, the exhaust steam being used as a "make-up" supply for heating the drying cylinders, etc., and the excess passing over to a "mixed pressure" turbo generator for the electrical load of the mill; then the steam requirements would be as shown in Table 6. Here it is seen that 15,000 lbs. of steam may be saved per hour by this alteration of plant which at 9 lbs. of steam per lb. of coal gives a saving of 2,000 lbs. of coal per hour, equal to a saving of 2½ cwt. of coal per ton of paper produced.

**Table 2.**

<b>HEAT AND POWER REQUIREMENTS FOR 4-MACHINE NEWS MILL.</b>	
H. of Stuff Wood Pulp, 75% Mechanical, 25% Chemical	Weight of finished paper from each machine . . . . . 154"
Average hourly output per machine	1,000 lbs.

<b>Heating requirements per machine.—Steam</b>	
for heating the drying cylinders, at 10 lbs. gauge pressure. (Assuming 3.5 lbs. of steam per lb. of paper) . . . . .	14,000 lbs.
Steam for the hot air plant. (Assuming 0.5 lbs. of steam per lb. of paper) . . . . .	2,000 lbs.

Total heating steam per machine per hr.	16,000 lbs.
<b>Power Requirements per Machine.</b>	
For preparation plant . . . . .	250/275 B.H.P. per Hour.
For constant speed portion of machine . . . . .	220/230 B.H.P. per Hour.
For variable speed portion of machine . . . . .	300/325 B.H.P. per Hour.
	800 B.H.P. per Hour.

**Power for Auxiliary Machinery Driven Electrically. —** (e.g. 2 super calenders, 4 re-reelers, cutter, mechanic's shop with buffing machine, pulp and coal handling plant, main water pumps, lighting, etc. . . . . 400/500 K.W. Hours.

**Table 3.**

**POWER PLANT FOR 4-MACHINE NEWS MILL. Scheme No. 1.**

Compound two cylinder non-condensing steam engines A, B, C, for driving the preparation plant and the paper machines, with a mixed pressure 500 K.W., D.C. geared turbo generator for the electrical load.

**Steam at Engines.**—Initial pressure, 180 lbs. per sq. inch (gauge); Superheated, 150° Fah.; Back pressure, 10 lbs. per sq. inch (gauge); Steam consumption approximately 20 lbs. per B. H. P. hour; Steam required for engines, A, B, & C, for 1 machine: 16,000 lbs. per hour.

**Total steam for four machines:** 64,000 lbs. per hour.  
**Steam at Mixed Pressure Turbine.**—Initial pressure 190 lbs. per sq. inch (gauge); Superheated 200° Fah.; Vacuum 28.5". Barometer 30".

**Steam Required for Mixed Pressure Turbo Generator.**

	Full load.
(a) When working as high pressure machine at 16 lbs. per K.W. hour . . . . .	8,000 lbs. per hour.
b) When working as low pressure machine at 30 lbs. per K.W. hour . . . . .	15,000 lbs. per hour.
Total steam required under normal working condition:	72,000 lbs.
Coal consumption per hour (Assuming 8 lbs. of steam per lb. of coal):	9,000 lbs.
Coal consumption per ton of paper produced:—	0.56 tons (11.25 cwt.).

**Table 4.**

**HEAT AND POWER REQUIREMENTS FOR 4-MACHINE NEWS MILL.**

All electric drive for the mill with extraction type turbine driven alternator in central power house.

**Stems at Turbine.**—Initial pressure, 190 lbs. per sq. inch (gauge); Superheated, 200° Fah.; Extraction pressure, 12 lbs. per sq. inch (gauge); Vacuum, 28.5"; Barometer 30".

**Total load at generator for the whole mill, allowing for efficiencies of motors, transmission losses, condenser auxiliaries, etc., etc.**—3,000 K.W.



Steam by-passed into heating mains. — 64,000 lbs. per hour.

Total steam consumption of turbo alternator under normal working conditions. — 82,000 lbs. per hour.

Coal consumption per hour. (Assuming 8 lbs. of steam per lb. of coal), 10,250 lbs. per hour.

Coal consumption per ton of paper produced: 0.64 tons (12.8 cwt.).

#### EXISTING POWER PLANT OF 4 MACHINE NEWS MILL.

Table 5.

Steam at Machine Engines.—Initial pressure, 140 lbs. per sq. inch (gauge); Superheated, 100° Fah.; Back pressure, 10 lbs. per sq. inch (gauge); Steam consumption, 32 lbs. per B.H.P. hour.

Machine Engines.—Variable speed, 325 B.H.P.; Constant speed, 75 B.H.P. Total power, 400 B.H.P. per machine.

Total steam consumption by the machine engines . . . . .	51,200 lbs. per hour.
"Make-up" live steam . . . . .	12,800 lbs. per hour.

Total steam for drying . . . 64,000 lbs. per hour.

Steam at Main Engine.—Initial pressure, 150 lbs. per sq. inch; Superheated, 150° Fah.; Vacuum, 26"; Steam consumption.—13 lbs. per B.H.P. hour.

Load on Engine.—2,400 B.H.P.

Steam Consumption of Main Engine.—31,200 lbs. per hour.

Total Steam Consumption for the Mill.—95,200 lbs. per hour.

Table No. 6.

#### PROPOSED ALTERATION TO POWER PLANT OF 4-MACHINE NEWS MILL.

Compound engines for driving the paper machine.

Approximate steam consumption . . . . .	22 lbs. per B.H.P. hour.
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Total steam consumption of machine engines . . . . .	35,200 lbs. per hour.
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"Make-up" low pressure steam required for heating purposes	28,800 lbs. per hour.
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Total steam for drying . . . 64,000 lbs. per hour.

Main engine converted into non-condensing with 10 lbs. per sq. inch back pressure and a load of 1,700 B.H.P.

Steam consumption.—23 lbs. per B.H.P. hour.

Total steam used by main engine.—39,100 lbs. per hour.

Of this 39,100 lbs. of low pressure steam from the main engine 28,800 lbs. have been taken from the "Make-up" heating steam in the machine house, leaving 10,300 lbs. available for the mixed pressure turbine.

Additional live steam required by the mixed pressure turbine for full load.—Approximately 3,000 lbs. per hour.

Total steam consumption for the mill.—77,200 lbs. per hour.

**SELECTION, PURCHASE AND USE OF COAL.**—The selection, purchase and use of coal are important factors in the economical operation of the mill. Very few paper mills take the trouble to analyze their coal supplies, or to test their calorimetric value. They generally pay every attention to the testing of moisture, etc., when purchasing wood pulp, but the coal is purchased with little regard to its quality. The limits of choice for any mill are, of course, governed by its locality, but generally there are several classes of coal

to select from. A sample of each should be tested for moisture, ash, sulphur and volatile matter, and in addition a calorimetric estimation of its heating value should be obtained. These are the factors which must be considered in judging the relative values of the coals, although there are many other points almost of equal importance, such as their behavior on the grate of the boiler, the amount of air required for combustion, etc. All these points should be considered in conjunction with the price of the coal, (including freightage), and the most economical coal is the one which gives the largest amount of heat per unit cost.

**STORAGE OF COAL.**—Considerable attention must be paid to the coal pile, as this is often a source of loss of heat, even in some cases amounting to 10 p.c. of the total thermal value of the coal. Mills generally consider it advisable to store large supplies of coal, and these require correct storage, so as to minimize the loss through deterioration. Coals of different quality and size require different treatment. Coals of different varieties should not be mixed together in storage, because some varieties of coal have a greater tendency towards spontaneous combustion than others, and would jeopardise the safety of the entire pile. The best way of storing slack or fine coal to ensure the minimum of loss is under water, but this is not usually convenient. Anthracite coal is not subject to spontaneous combustion, and could be stored to an unlimited extent in one pile. Bituminous coal will, however, ignite and suffer disintegration very readily, and this coal should be handled to produce as little dust and fine coal as possible, as this in the pile very readily causes oxidation and spontaneous combustion. Coal should either be piled to permit of a free circulation of air, so as to carry off the heat due to the oxidation of the carbon, or else packed so closely that air cannot enter the pile and stimulate this oxidation. For ordinary bituminous fuel, the pile should not be over 12 ft. in height, and no part of the interior of the pile should be more than 10 ft. from an air cooled surface. The constant wetting and drying of coal stored in the open tends to rapid deterioration, and it is thought that this is the main cause of spontaneous combustion. In order to ensure the greatest economy in stacking coal, regular inspection is necessary, and if the temperature rises much above 150 deg. Fah., it is advisable to remove the coal to some other part, and thereby cool it down. When coal has once been gathered and cooled down in this way, it very rarely causes any further trouble.

**ECONOMY IN THE BOILER ROOM.**—Coal, when burned in the boiler gives out heat, which is either absorbed by the boiler itself, or is dissipated up the stack, into the ash pit, or into the air surrounding the boiler. The heat absorbed by the boiler determines the efficiency of the plant, and every endeavor should be made in order to increase this amount and reduce the waste represented by the hot gases passing into the stack etc. The largest waste is naturally up the stack. In order to ensure the greatest economy, the boilers should be kept as clean as possible, both internally and externally, so that they may abstract the maximum number of heat units from the hot gases. The combustion also should be as near perfect as possible, without supplying too much air to the fire grate. One of the best tests we have for determining the efficiency of combustion is the estimation of the CO<sub>2</sub> in the waste gases passing to the chimney, and a CO<sub>2</sub> recorder should be in constant use. A registration of at least 10 to 12 p.c. CO<sub>2</sub> should be obtained from flue

gases, in order to ensure the maximum fuel economy. With mechanical stokers the percentage of  $\text{CO}_2$  can be kept steady about 14 p.c., but by hand firing the percentage varies a great deal. The feed water supplied to the boiler should be as hot as possible, the temperature should be around 250 deg. or over, and it is important to remember that every 10 deg. that the feed water is heated means a saving of nearly 1 p.c. of coal. No boiler plant is complete unless economisers and superheaters are fitted. The economiser has long been established in practice, and little need be said as to its great value in increasing the efficiency of the boiler plant. Superheaters, while not increasing the efficiency of the boiler, are conducive to the greater efficiency in the power plant. Modern steam raising is really a process in three stages. The economisers should supply the boiler with feed water as near the temperature as possible as that of the steam in the boiler. The boiler should supply the latent heat only, producing steam at the required pressure; the superheater should dry and superheat this steam to the required temperature. Waste gases from the boiler, if no economiser were fitted, would carry away with them a large amount of heat, the temperature of these gases often exceeding 600 deg. Fah. With an economiser, however, a great portion of this heat is abstracted, the temperature of the gases when leaving the economiser being reduced to 350 deg. F. or even lower. Coal is often wasted by running more boilers than necessary to carry the load. Boilers generally work at the greatest efficiency at some certain evaporation, and they should be kept as near this mark as possible. If at any time the demand for steam is reduced, it is more economical to work a fewer number of boilers at their maximum steaming efficiency and to "bank" the rest than to keep all working at reduced steaming capacity. Another important point in the efficiency of the boiler plant is to see that there are no leaks of air into the system. Cold air entering the boiler plant lowers the temperature of the gases and thereby decreases the rate of exchange of the heat from the hot gases to the water in the boiler. Another frequent source of loss of heat is a short circuiting of the flue gases, owing to leakages in the boiler settings. Heat is also lost by radiation from exposed parts of the boiler, uncovered steam pipes, valves, etc. All these should be insulated as far as possible by thick insulating material, especially in the case of pipes carrying high pressure steam, as this being at a high temperature readily loses heat to the surrounding cool atmosphere. In conclusion, it is very necessary that reliable apparatus should be installed whereby such important information as the following can be obtained: (1) Coal consumption; (2) Temperature of the gases, and the amount of  $\text{CO}_2$  entering the chimney; (3) Temperature and amount of feed water to boilers; (4) Temperature, pressure and amount of steam generated; (5) Steam consumptions for power and heating purposes, etc., etc. Tabulated records of this nature are of the greatest assistance in running a paper mill with economy and efficiency, and no mill can be considered really up-to-date where they are not available.

Eleven million dollars is involved in the transfer of the 1,600,000 acres of timber limits owned by the New Brunswick Railway Company, which are expected to be purchased by the Fraser Company, Limited, and on which they have had an option extended.

### THE IMPORTANCE OF ACCURACY IN PULP TESTING. Standard Methods of Sampling and Testing Pulp, T.A.P.P.I.

By F. M. WILLIAMS, Member of Committee.

The accurate determination of moisture in pulp is one of the most important things about the mill. This is equally true whether you buy, sell, or make and use your own pulp.

An error of a few per cent in the determination of air-dry pulp may run into thousands of dollars and often leads to endless controversy. One referee, in fact, has made final tests where the differences have run as high as \$40,000.

One of the first things which this committee found in undertaking this work of standardizing methods to insure greater accuracy in testing was the lack of proper equipment for accurate tests in many mills. We found home-made ovens without any uniform temperature regulation, and only in a few instances were thermometers used to determine the temperature at which pulp was being dried; inaccurate scales, these often so inaccurate that it was impossible to weigh closer than 5% of the truth.

So the first thing to be done was to perfect a suitable pulp testing outfit, preferably electrically heated and controlled, thereby doing away with unequal steam pressure and leaky steam joints, an oven of sufficient capacity to take large enough quantity of samples to be a fair average of the lot, one with a recording thermometer which would give a positive record of temperature conditions during test and also serve as an indication when the samples were completely dried. The Williams Standard Pulp Testing Outfit was the result.

Uniform temperature regulation is secured by means of a reliable thermostat upon each heating element. When once adjusted these maintain any desired temperature indefinitely without further attention.

Accurate sealed scales are furnished with each outfit, these scales having sensibility equivalent to 1/100 of 1% on the proper amount of pulp samples taken. For convenience in weighing and handling samples, a side table is attached to the oven.

The construction of the oven is of double-walled asbestos lumber with special heat insulating material between the walls, making it not only an absolutely fire-proof apparatus but a permanent piece of equipment which will last as long as the mill.

### CORNWALL PAPER MILL.

The Niagara Wall Board Company, Buffalo, N.Y.; Skowhegan, Meh., and Penman, N.Y., are incorporating a Canadian company, the name of which will probably be the Cornwall Pulp and Paper Company.

This company has leased, with an option to buy, the mill and site of Ross & Co., on East Water street, Cornwall, Ont., and is now in possession, getting ready for business. The company's products are wall board and heavy paper specialties. They expect to be in operation as soon as the buildings can be got ready and the necessary plant and equipment installed. There will be a staff of from 25 to 30 well paid men, with an annual payroll of about \$50,000.

E. E. Emigh, of Richmond, Virginia, and E. P. Foley, of Thorold, Ont., are now here getting the plant in shape.

It is reported on good authority that Clarke Bros. will establish a new plant at St. John, N.B.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**E-2. Dry distillation of concentrated cellulose waste lyes.** W. Schacht. German Patent 301,684. 27-8-16. Concentrated cellulose waste lyes are distilled on a current of an inert gas or steam or a mixture of both. The residue in the retort is then made alkaline and further distilled. From 100 parts of cellulose lye pitch (specific gravity 1.5) 50 liters of an aqueous distillate containing ammonia, alcohols, and oils was obtained. On the addition of alkali, and further distillation there was obtained 2 to 4 kilograms of oil of specific gravity 0.930, which yielded about 25 percent of a good burning oil, specific gravity 0.800-0.815, and various pyridine bases.—C. J. W.

**E-3. Removal of water from waste liquors from sulphite and sulphate cellulose manufacture.** E. Oman. German Patent 316,592. 26-6-17. Waste sulphite liquors are kept agitated and subjected to a temperature below their solidification point, any snow or ice crystals formed being removed by filtration or centrifuging. Portions of liquid adhering to the crystals are diluted. The low temperature of the crystals, as well as of the concentrated liquors, may be utilized for cooling further quantities of liquor. The concentration of the liquors may be increased to 40 percent by this method.—C. J. W.

**E-5. Methods of heating sulphite and like digesters.** J. K. Ruths and Aktiebolaget Vaporakumulator. English Patent 144,084. 29-5-19. The period of digestion is shortened without affecting the quality of the product if steam of low pressure, obtained from an accumulator connected with the sulphite-boiler, be used for the steaming operation and also for starting the digestion which is then completed with steam at a higher pressure.—C. J. W.

**F-2. Elimination of malodorous substances from the waste gases from soda-cellulose manufacture.** C. G. Schwalbe. German Patent 319,594. 31-7-17. The gases are brought into contact with finely-divided wood, sawdust, or other vegetable waste product. Mercaptans, etc., may be destroyed before this treatment by mixing the gases with an oxidizing gas, such as chlorine, ozone, etc., or the wood or like may be subsequently treated with an oxidizing gas or liquid.—C. J. W.

**G-6; K-11. Straining apparatus for use in the manufacture of paper and wood pulp.** C. Martin and E. Lloyd, Ltd. English Patent 147,356. 30-7-19.—C. J. W.

**K-6. Manufacture of dense, strong paper.** C. G. Schwalbe. German Patent 319,826. 27-4-18. Addition to 303,498. Pasty materials obtained by treating waste paper or cellulose with chlorine and water, followed by grinding with water, are incorporated with paper pulp.—C. J. W.

**K-7. Beater Tub for paper pulp.** W. J. Mollersh-Jackson. English Patent 148,107. 1-4-20.—C. J. W.

**K-10. Sizing of paper by means of mixture of colloidal substances with water glass.** M. Muller. German Patent 317,948. 20-7-17. The sizing agents are precipitated partly or completely by the addition of acids or acid salts, especially aluminum compounds, prior to the addition of the mixture to the paper stock. Substances which increase the stability and have filling

or sizing properties or filling materials or coloring matters in the form of emulsions, may also be introduced.—C. J. W.

**K-10. Sizing and impregnating paper, fabrics, etc., with glue, casein, etc.** Exportingenieur für Papier, U. Zellstofftechnik. German Patents 291,228 and 291,229. 3-7-15. An addition of 2 percent sodium hydroxide or of lactic acid (30 percent on the weight of the dry glue) is made to glue solution to increase its penetrative power. Methylformamide (about 2 percent on the dry glue) is used to harden the glue or casein.—C. J. W.

**K-12. Paper making machines.** J. Thompson. English Patent 145,845. 28-3-19.—C. J. W.

**L-5. Viscosity of solutions of nitrocellulose in mixtures of acetone and water.** Irvine Masson and Robert McCall.—C. J. W.

**L-7. Method of impregnating textile or paper yarns or fabrics.** Deutsches Pyroxitges, m. b. H. German Patent 301,684. 27-8-16. The yarn, etc. is impregnated with wood tar and then dusted over with zinc oxide, the latter combines with the tar and forms a dry, wax-like mass.—C. J. W.

### STUDENTS' SUMMER WORK SUCCESSFUL.

The second summer's experience of the Technical Section of the Canadian Pulp and Paper Association in assisting University students to get mill training has come to a close. The work has been most encouraging and will be an asset of real value to the industry. It has now become more of an established custom than an experiment.

The scheme of employing students during the summer months has according to reports received from the Secretary turned out to be even more profitable than the previous year. Many of the students have gone back for the time and have made themselves useful to the mills and at the same time have greatly increased their store of knowledge of the industry.

As a result of the prizes offered by the Association for the best essay on the Summer's Work a number of entries have been received which are now under consideration by the judges. The prizes offered are \$100, \$50 and \$25 respectively for the first, second and third positions.

That the mills recognize that the young student of today represents the potential operator of tomorrow is indicated by the more than usual interest taken by mill managers all over the country.

The students for their part have shown good faith by entering the mill and working without any desire for special preference and have thereby greatly assisted the management to give them a very wide experience.

### LIST OF EQUIPMENT.

The November Issue of the *Technical Products Economist* listing thousands of items of new and used machinery and equipment for sale is now ready for distribution. For the convenience of prospective purchasers, it is divided into five sections. Refrigeration, Power, Pulp and Paper, Tank and Chemical

# UNITED STATES NOTES

Announcement that Americans are purchasing newsprint paper in Finland, was contained in a cablegram received last Thursday by the Irving National Bank, of New York, from A. E. Lindhjen, its Copenhagen representative. The cablegram said 40,000 tons of newsprint had been ordered from Finnish firms. It also reported that Norwegian and Swedish paper manufacturers had curtailed production one third, and that a further reduction was feared.

John H. Smith, inventor of the process of printing on dry paper, died last week at his home, Monticello, N.Y. Mr. Smith was born in New York City, in 1839. At ten he went to work as printer's devil for Horace Greeley on the New York Tribune. In 1870, while foreman of the Bible House printing plant, he discovered his process of printing that did away with the practice of dampening the paper. Mr. Smith is survived by his widow and two sons.

The place as director of the division of paper work recently vacated through the resignation of Austin F. Hawes, has been assigned to C. W. Boyce. Mr. Boyce, who has been connected with the Forest Service for several years, has just been transferred from Portland, Ore., to Washington, D.C. At the present time he is at the Forest Products Laboratory, Madison, Wis., studying paper matters.

The mills and other property of the North Star Egg Case Company, at Quincy, Ill., have been acquired through purchase by the Robert Gair Company, of Brooklyn, N.Y. \$700,000 was the amount paid by the purchasers to the Weis interests who have been in control of the property heretofore. Immediate possession of the mill property was taken by the Robert Gair people. This does not mean, however, that the North Star Egg Case Company is to suspend operations and pass out of existence. Under the terms of the sale the Weis interests retain the egg case filler factory property, machinery and equipment, so that operations in this branch of the business, can be continued.

In a published announcement given out last week, the Robert Gair Company made known also its acquisition of two New England mills, namely, the Haverhill Box Company and the Thames River Specialty Company. Attention was directed in this announcement to the increased capacity of the Gair Company, which, it was stated, turned out last years folding-boxes, shipping cases, labels and containers, in a volume large enough to carry over a million dollars' worth of merchandise.

A program of reforestation and development intended to redeem the cut-over lands of Louisiana bids fair with its carrying out, according to the New Orleans "Times-Picayune," to result in the dotting of the state's piney woods with numerous pulp mills. The development project was born at a meeting held in a glade of Umania forest several days since, at which men from all sections of the North, East and South, representing millions of capital gathered. A policy of reforestation and perpetuation of the lumber industry in Louisiana was formulated. Henry E. Hardtner, president of the Canada Lumber Company, and also president of the Southern Forestry Congress, was the host to the visitors.

Mr. Hardtner has been conducting experiments which show that pulpwood can be grown on cut-over lands in from ten to fifteen years. His reforestation plans and other development policies were approved by the gathering. Commissioner M. L. Alexander, of the Louisiana Department of Conservation, assured those present, that his department would lend every possible co-operation in the reforestation work.

## BRAZIL MAY MAKE PULP.

Brazil is likely to cultivate the pulp and paper market by utilizing her vast resources in forest, according to Senor G. Alves de Lima, formerly Brazilian Consul in Montreal. With the increase of newspapers on the South American continent, he says, the demand for newsprint is becoming a more serious matter, and in days when paper is such an asset, the attention of manufacturers has been turned to the immense forests in the southern portion of Brazil. At present, pulp is imported from Canada, Sweden and Norway.

## U. S. IS CANADA'S LOGICAL MARKET.

A despatch from New York says that Angus McLean, Vice-President and General Manager of the Bathurst Lumber Co., Ltd., Bathurst, N.B., pulp and lumber producers, declared on his arrival in New York from abroad, that Canada would take care of the United States in paper supply because of easy transportation and on account of her proximity to Canada's logical market. England will get her paper and pulp from Scandinavian countries in greater quantities than heretofore, he is reported to have said. "While abroad I discussed the paper situation with Lord Beaverbrook and it is his opinion that pulp will ease up," said Mr. McLean.

## NOW TIPPET & CO.

Tippet & Co. have bought from the estate of the late Arthur P. Tippet, all his interest and goodwill in the late firm of Arthur P. Tippet & Co., and will conduct the agency and importing business, heretofore, conducted by them, under the new firm name. The general management will be in the hands of Mr. F. H. Tippet, who has long been connected with the late firm, and who previously was in business in the same line in Liverpool, England.

## JOINS EMERSON STAFF.

Miss Jessie E. Minor, who has been for several years the Chief Chemist for the Hammersley Manufacturing Company of Garfield, New Jersey, has recently moved to Springfield, Massachusetts, to take charge of the Pulp and Paper department of the Emerson Laboratory at 145 Chestnut Street. Miss Minor was for several years a graduate student at the University of Pennsylvania and later studied at Bryn Mawr College where she received the degree of Doctor of Philosophy in chemistry. She also spent several years studying industrial conditions in the Union of South Africa. Several articles under her name have appeared in the Pulp & Paper Magazine.

# PULP AND PAPER NEWS



It is stated at the Parliament Buildings, Toronto, that E. W. Backus is by no means sure of being the successful tenderer for the English River timber limits. According to those who are in close touch with the development of Northern Ontario at least two other companies are likely to put up formidable opposition to Mr. Backus. Tenders for the limits are due to be opened on December 18th. Premier Drury, when interviewed, claimed that the Canadian Pacific Railway would not be the only road to benefit in the event of the Backus interests securing the English River limit. He contended that whoever gets the limit will have to build a line connecting with the Canadian National Railway, which would stand to get as much business as the C. P. R.

The Landry Pulpwood Company, Limited, has been organized and granted incorporation by the Dominion Government. The company, which is capitalized at \$100,000 is authorized to carry on business in pulp, paper, lumber and timber and allied industries. The incorporators are Alphonse Landry, Sr., Joseph Landry, Jr., and Albert Landry, all merchants of Lac-au-Saumon, Que., Eric Onésiphore Bernier and Aneina Tardif, of Quebec. The head office of the company will be at Quebec.

The firm of Kilgour Bros., paper bag manufacturers, etc., Toronto, has been granted incorporation as a limited liability company with a capital stock of not less than \$2,500,000.

Frederick Atkinson, of London, a former well-known newspaper man of that city, has been appointed vice-president and general manager of the Daily Garment News, an important trade publication, printed in New York.

Mr. James Thompson, President of the Thompson & Heyland Lumber Company, Limited, Toronto, lumber and pulpwood dealers, has gone on a trip to Northern New York to visit the mills in that district.

Mr. W. R. Gingerich, of the Tyrone mill of the West Virginia Pulp and Paper Company was in Toronto this week. In company with Mr. Heyland of Toronto, he left to visit the wood jobbers at Huntsville and vicinity.

Mr. L. Corey, of the Corey Trading Company, New York, lumber and pulpwood dealers, spent a few days in Toronto, this week.

The Canada Box Board Company expects to have their new pulp mill at Frankford running by January 1st. Arrangements have been made with the Thompson & Heyland Company, Toronto, for the complete supply of wood. The company expects to produce at the Frankford mill 7,000 tons of groundwood pulp a year.

Mr. George Winlow of the Toronto office of the Canada Paper Co. Ltd., joined a party this week and left for a few days hunting expedition to the north country.

The number of enquiries reaching the Dominion Commission of Conservation indicates an increasing interest in the saving of waste paper. Schools are taking

up the work and, in some cities, a friendly rivalry among the school children has resulted in a much larger quantity being secured. Apart altogether from the financial returns, the work is one of national importance. The demand upon the forests for pulpwood is enormous, and, while the utilization of mixed waste papers for the manufacture of newsprint is not yet commercially feasible, it is being generally used in making building and roofing papers, box board, etc.

The Hamilton Times, which started a morning paper under John Hurie, late manager of the Canadian Daily Newspaper Association, announced this week the suspension of publication after three issues had been put out. The Ontario Newspapers Corporation, Limited, under whose auspices the paper was started states that the suspension as a morning paper was forced on them by reason of trouble with the printers. The management states that they had been paying a scale of wages in excess of the morning newspaper scale provided for in the agreement between the Hamilton publishers and the Typographical Union and that they were unable to meet the demand of the Union.

The regular quarterly luncheon of the Toronto Carton Club held outside the city of Toronto took place on Tuesday, November 9th, at Kitchener. There was a good representation present from Toronto as well as from Kitchener, Galt, Brantford, Guelph and Stratford. After a bountiful repast provided by Mr. Boehmer, of Messrs. A. & C. Boehmer, Ltd., of Kitchener, the party went through the plant of the Dominion Tire Co., which proved to be a very pleasant event. Following the visit to the tire plant a meeting of the Club took place at the Walper House when present trade conditions were thoroughly discussed. The consensus of opinion of those present was that with the slackening of demand, members should recognize that there will only be hand to mouth buying until the present period of readjustment is completed, whenever that may be. It was also felt that members should not attempt to increase business by endeavoring to take away the customers of other members, as such action would only provide retaliation, with disastrous results to the trade while it was pointed out that cutting of prices below a price based on cost of raw materials, plus a fair profit, will not stimulate business, but on the contrary retard it.

To gain an insight into Canada's pulp and paper industry, thirty representatives of the leading business interests of Chicago visited Thorold this week. A lengthy inspection was made of the Ontario Paper Company's mill, each detail of the operation of turning spruce into newsprint being explained to the visitors by Mr. J. H. Curtiss, the manager of the plant. The visitors also inspected the work which is proceeding in connection with the installation of a fifth paper-making machine, which will bring the output of the mill up to more than 300 tons of newsprint paper a day. Following the visit to the Ontario Paper Co.'s plant the Chicago men were shown the work on the Welland Ship Canal and were entertained at luncheon at the Niagara Falls Country Club.

Established in 1906 and carried on since that year, the Canadian Courier, published in Toronto, has suspended publication for the present, at all events, although it is stated that reorganization will be attempted with a view to again bringing out the periodical. Lieut.-Col. John A. Copper, was the first editor of the paper and his place was taken by Augustus Bridle who was in charge at the time of the suspension.

The Ontario Government has decided to make provision for the building of a well-planned town at Kapuskasing in connection with the opening up of a big pulp and paper mill there. Spruce Falls, the new town, is to start off with a site of 900 acres in extent, and a plan has been adopted which provides that every house shall be built upon a lot of at least 60 feet frontage and 120 feet in depth, and a loan of \$400,000 from the Housing Fund of the Government for the construction of dwellings. It is proposed also to remove to this new section a number of settlers in Haliburton who are acquainted with conditions in the bush country, and will take up farms around Spruce Falls and grow produce for the townspeople.

Mr. J. E. A. Dubuc, a principal promoter of the new \$500,000 Chicoutimi proposition, La Papeterie du Saguenay, Ltée., sailed on the Empress of France for a holiday on the ocean. He figured such a trip the best way to escape from business.

#### APPROVED CONDITIONS AT BELGO.

Mr. P. J. Jobin, Inspector of Industrial Establishments of the Province of Quebec, has visited the Belgo-Canadian Pulp & Paper Co.

The purpose of his trip was two fold:

1.—Under the Provincial Law, no Industrial Concern can employ children under 14 years of age and none under 16 years of age unless they can read and write.

Mr. Jobin, put about 20 boys between the ages of 14 and 16 through the third degree and all were given registration Cards.

Out of the total only one professed to be unable to read and write and two were given "Fair" Certificates. The other came through with honors. The first three will have to attend a night class to learn to read and write if not the inspector will withdraw the certificates and the boys will have to wait till over 16 before they can get employment in this Province.

2.—Inspection of the mill for "Safety devices". Mr. Jobin has congratulated the Company on the efficient way the machines are protected and has specially congratulated them on the First Aid Room, its operation and the result obtained.

The Shawinigan Falls Review, successor to the Belgo Bulletin is growing rapidly, having 32 and 34 pages. It will soon have to appear weekly. A recent number has a fine review of the symptoms and treatment of common diseases.

The Belgo Canadian Pulp & Paper Company has secured for its employees three cars of potatoes, guaranteed to be "good keepers." The potatoes will cost employees \$1.45 per bag of 90 lbs., plus the bagging and delivery charges. If the arrangement works satisfactorily this fall it is highly probable that next year the ordering of winter preserves will be extended to other necessities.

The Belgo Canadian Co. entertained 75 members to the 9th Congress of the Chambers of Commerce of the British Empire, last month.

#### PRESIDENT MCGARRY INSPECTS WHALEN PULP & PAPER MILLS.

Hon. T. W. McGarry, K.C., who is now President of the Whalen Pulp and Paper Co., Ltd., is in Vancouver, and will make a thorough inspection of the properties of the company while he is on the coast. It was too early in his visit for our correspondent to secure any statement from Pres. McGarry regarding future plans in connection with the Company, but before he leaves there will be, in all probability, an appointment to the general managership of the company.

#### CRANDON COMPANY CHANGES NAME.

The J. B. Crandon Company, of Portland, Maine, have changed the name of their corporation to Mill Appliance Company.

This corporation is manufacturing and putting on the market specific gravity acid controls, feeding devices for rotary melted sulphur burners, dry sulphur feeds, sublimed sulphur detectors, and other devices largely used in sulphite pulp mills.

The change of name became desirable to avoid confusion with the Crandon Manufacturing Company, with which Mr. Crandon was formerly connected but it was made more particularly in view of the fact that their prospective business will be largely with mills generally, particularly those in the various chemical industries and will not be confined to pulp and paper mills.

#### PONT ROUGE NOTES.

The correspondent to the Neponset Review writes, in the October number:

The new dam is commencing to look like a real thing now, as the contractors will soon finish pouring the cement into their fourth pier soon. This construction is quite a boom for Pont Rouge. All available lodgings have been taken up and the hotels have got to be notified a week in advance if you want to get sleeping quarters here. We have numerous visitors from all over the country, who come to see it, especially Sunday, and at night when we have our flood lights playing so the men can work, it is a very pretty scene.

We have our 2-100 Beaters running, and have installed one of our new Cylinder moulds.

The material for our new crane system is pretty near all here, and we are just planning to have it installed.

Our new Babcock and Wilcox Boiler has arrived, but due to the fact that some of the parts have not yet been received, the work of erecting is being held up.

Believe me, there will be something doing at Pont Rouge when all these improvements are completed.

The Little Bird strainer valve which we have installed on the machine is a great relief to the machine tenders.

The two Bird Screens have just arrived, and we are very anxious to see them running.

Pont Rouge is to be congratulated on the tonnage and quality of felt turned out during the past few months and also on the progress of the new work. Of course, the real big job there at the present time is the construction of the new concrete dam. This dam, when completed, will increase our power to quite an extent and also overcome the difficulty we had with the old dam of water leaking under it. The work is going along well, day and night gangs working.

# A New Call to Arms

Against the Powers of Ignorance

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### SIR ARTHUR CURRIE

formerly Commander-in-Chief of the Canadian Army, and now Principal of McGill, gives this message :—

"We are all standing to-day in another set of trenches, prepared to give battle against the powers of greed, selfishness, and ignorance, and ready and willing to evince the same high courage, the same unflinching devotion, the same steadfast earnestness, and the same determination to win as were displayed by our countrymen in the crisis of the Great War. McGill aims to be a great seat of learning, to develop in its students a love of study and research, to help them understand and appreciate the lessons of history, to master the mysteries of nature, and to obtain a proper conception of their duties and responsibilities as citizens, while recognizing at the same time the spirits and the needs of the times. She will maintain the highest intellectual traditions of our race, and will inculcate the truest moral standards. She seeks the truth and unselfishly desires to serve."

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McGILL PAYS OUT OVER \$500.00 PER HEAD PER YEAR TO TRAIN HER STUDENTS, BUT RECEIVES LESS THAN \$200.00 IN FEES FROM STUDENTS.

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#### DO AS THEY DO

## Give What You Can



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, November 13. — Dullness in the printing trade, bigger stocks of paper in the hands of the jobbers, the mills busy with considerable tonnage ahead and prices generally firm may be mentioned as the chief features of the Canadian paper trade during the past week. The printers say that there has been a distinct falling off in business. Certain it is that their policy is to skimp buying to the finest point and in this there are those who think they see an effort by the printers to force prices down. At any rate the printers are not buying beyond their immediate requirements and the result is seen in the jobbers' warehouses where stocks, in a number of lines, are larger and more varied than they have been since the paper boom set in. Both paper mills and jobbers report that it is harder to get orders now while at the same time there is no disposition to regard trade as at all bad. The mills are not worrying, for they are still some months ahead of the game for orders, and in many cases are shipping paper now that was ordered months ago, while this business is being augmented by a fairly good demand for future delivery on orders now being booked. There is an air of confidence among the jobbers which is not affected by the dullness in the printing trade and they view their increasing stocks in the warehouses with satisfaction, believing that the era of buying will resume very shortly. Speculation is still rife as to what the future holds for the trade in the way of lower prices for papers and there is a pretty general feeling that a decline is coming. That it will not take the form of a general slump is the opinion held by most of the paper makers and jobbers. The key to the situation is the condition of the pulp market. While that holds firm, as it is at the present time, it is argued that paper prices will not come down. On the other hand if the pulp market weakens, lower paper prices may be looked for.

**PULPWOOD.** The price of pulpwood is still holding firm, although there has been a slight weakening in unpeeled wood. This has not been of a sufficiently pronounced character to affect the market. Some dealers have been offering the distributors unpeeled wood at about 90c a cord below the prices of the past few weeks but this reduction has not become general. For the most part the market remains firm. There are still evidences of a tremendous production of wood in Quebec and New Brunswick, although in Northern Ontario peeled spruce production has been rather small. Poplar shows a larger production than for some years past and things are shaping up in Northern Ontario for a big output of unpeeled wood.

**GROUNDWOOD.** There is a slight tendency in the high grade pulp market to weaken, although there is a very good demand, but prices are holding up fairly well and no great slump is looked for. There has been a slight falling off in the market for groundwood pulp, but the decline has not been great and was nothing more than the somewhat abnormally high prices of the past few months could stand. The demand is still

very active and the prices are sufficiently attractive to induce some of the manufacturers to sell their groundwood instead of converting it into paper.

**BOOK PAPERS.**—Although there was an easing up in the demand for book paper during October, the present month has opened up well and there promises to be a bigger volume of business in this line this month than for some time past. According to the jobbers there is more business ahead than they can get stock for. The mills, too, report a well-sustained volume of business, although they have noted a tendency to stick to the smaller orders policy which became general a few weeks ago. One of the mills reports a distinct improvement in demand for book papers and the fact that they are still considerably behind with their orders, combined with sustained demand, would indicate that this branch of the paper industry is perhaps better situated than some others. It is worthy of note that one Toronto jobbing house is only now receiving shipments of book paper ordered last January for last May's delivery and the house is in an excellent position to absorb them. The general opinion seems to be that while there were signs of easing off in demand a week or so ago, the trade is not going to be materially affected and that prices will not drop before the Spring. At the same time it is thought quite likely that there may be cases of price-cutting by some jobbing houses who may be anxious to unload, fearing lower prices. The big houses, however, have not shown any symptoms, as yet, of cold feet. Whatever lowering of prices comes, if it does come, will be due to a realization that the era of high prices is passing and that the trade is getting down again to something like a normal basis.

**COATED PAPERS.**—A distinctly cautious attitude characterizes the coating mills. The mills are reported to be buying very carefully, not knowing just what turn the situation will take. Although there has been a slight falling off in demand for coated stock, the volume of business has kept up fairly well, but the mills are showing a hesitancy in buying stock. One representative of a coated paper mill in the Toronto district stated that his mill was only buying paper from hand to mouth at the present time so as not to get caught with heavy stocks in case of a decline, and in the conviction that the market was in an unsettled condition.

**TISSUES AND TOILETS.**—The mills report a distinct tendency to hold off buying on the part of the jobbers. There are no heavy stocks of paper in any of the warehouses and jobbers are not stocking up for the future. Small orders have replaced the heavy consignments. Business at the mills, however, is satisfactory and there have been only a very few cancellations. There is a considerable tonnage yet ahead of the mills and orders that have been on the books for some months are now being shipped and accepted. Prices on all light weight papers are holding firm although a decline is looked for at the beginning of the year. This, of course, will largely be contingent





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on the pulp situation, which has shown no sign of easing off as yet.

**WRAPPING PAPERS.**—While there has been a falling off in demand for wrapping papers and paper bags, the jobbers report that they could use more stock if they could get it. None of the warehouses are carrying big stocks for the reason that they cannot get them from the mills. A satisfactory volume of business is being done and the trade generally is in a good condition with prices firm.

**RAG AND PAPER STOCKS.**—The new cotton rag market has continued in good condition, due chiefly to lack of supplies. There has been no larger movement to mills but buying has been large enough compared with supplies. Old rags have slumped again with demand almost at a standstill.

Consumers continue to eke out the supplies they have on hand coming into the market only when lack of supplies forces them. The outlook for the balance of the year is not cheerful but dealers hope for better things with the turn of the year. The waste paper market is slower than before although the prices are near stabilization. Shavings, both hard and soft, continue firm for the same reason that applies to the new cottons—not the amount of sales, but lack of supplies. With the exception of these grades the market slumped off again this week. The future of the waste paper business is shrouded in doubt but local dealers unite in saying that collections can not keep up if prices drop any lower. If the price does not drop any lower and business with the mills picks up, waste paper dealers look for a fair business after the first of the year.

Following are quotations on rag and paper stock:

	Per Cwt. F.O.B. Toronto	
No. 1 shirt cuttings	\$23.00	—\$24.00
No. 1 unbleached cotton cuttings	\$17.50	—\$18.00
No. 1 fancy shirt cuttings	\$13.00	—\$13.50
No. 1 blue overall cuttings	\$11.50	—\$12.50
Bleached shoe clip	\$15.50	—\$16.00
White cotton hosiery cuttings	\$16.50	—\$17.00
Light colored hosiery cuttings	\$13.00	—\$14.00
New light flannellette cuttings	\$14.50	—\$15.00
No. 2 white shirt cuttings	\$13.50	—\$14.00
City thirds and blues (repacked)	\$ 3.25	—\$ 3.50
Flocks and satinettes	\$ 1.15	—\$ 1.25
Tailor rags	\$ 0.90	—\$ 1.00
Gunny bagging	\$ 1.50	—\$ 1.75
Manila rope	\$ 5.25	—\$ 5.50
No. 1 white envelope cuttings	\$ 8.50	—\$ 9.00
No. 1 soft white shavings	\$ 8.00	—\$ 8.25
White blanks	\$ 5.00	—\$ 5.25

Heavy ledger stock	\$ 3.75	—\$ 4.00
No. 1 magazine	\$ 2.50	—\$ 2.75
No. 1 book stock	\$ 2.40	—\$ 2.50
No. 1 manilla cuttings	\$ 5.00	—\$ 5.25
No. 1 print manilla	\$ 2.00	—\$ 2.10
Folded news	\$ 1.50	—\$ 1.75
Over issue, news	\$ 2.50	—\$ 2.75
Kraft	\$ 5.25	—\$ 5.50
No. 1 clean and mixed papers	\$ 1.00	—\$ 1.10

**NEW YORK MARKETS.**

New York, November 13—(Special Correspondence) —Demand for paper continues of narrow compass. Such buying as is being indulged by consumers and jobbers is solely against actual immediate needs, and with business in all lines quiet, there is not as heavy a consumption of any kind of paper as there was up to a short time ago. The general trend of prices is still downward. This is but to be expected under prevailing conditions when seemingly every commodity price is on the downgrade and when buying in all lines is light. Comparatively speaking, the paper industry today is in probably the healthiest position of any manufacturing industry in this country, and while matters in the paper trade are far from what could be desired in some departments there is no demoralization of prices nor any general shutdown of plants that marks many other trades.

The quietness has been accentuated this week by the fact that most paper mill executives have been in Chicago attending the meetings of the American Paper and Pulp Association there in conjunction with "Paper Convocation Week." This of course has slowed up matters at manufacturing centers because company officials have not been present to speed things up and to push business. Reports from most mills are to the effect that a majority of them have enough business booked or are securing sufficient orders to keep them fairly well engaged. Here and there a plant, more often a box board mill, has closed down for a time, but production in the aggregate continues at close to normal. At the same time, it cannot be denied that the average paper or board mill is at present accumulating a surplus of stock, and unless demand from consuming sources undergoes some broadening in the very near future, it seems inevitable that a change at manufacturing points will have to be effected. Both manufacturers and dealers place great stress on the narrow spot demand for paper of every description. Publishers and printers; in fact, all consumers of paper, are invariably confining their consumption at the moment

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Auramine O. conc.	Bismarck Brown R. conc.
Acridine Yellow R.	Safranine B.S.
New Phosphine R.	Safranine R.F.F.
Chrysoidine Y. conc.	Methylene Violet 2R. conc.
Basic Green B. conc.	Methylene Violet 2B. conc.
Methyl Violet 2B ex.	Malachite Green Crystals.
Methyl Violet 4R ex.	Methylene Blue B.B. conc.
Magenta Powder.	Methylene Blue 1814.

## SUBSTANTIVE COLOURS

Paramine Fast Pink B.	Paramine Fast Bordeaux B.
Paramine Sky Blue F.F.	Paramine Green G.
Paramine Blue 2B.	Paramine Violet N.
Paramine Black B.H.	Paraphenine Yellow G.
Paramine Yellow R.	Diazamine Fast Yellow H.
Paramine Brown G. conc.	Rosophenine 10B.
Paramine Brown M.	Benzopurpurine 4B.

Paper Black 3181

## ACID COLOURS

Orange II.	Ponceau G. conc.
Orange IV.	Ponceau 4R conc.
Naphthol Blue Black 10B.	Croceine Scarlet 5R.
Acid Prune V.	Carmoisine S.
Brilliant Bordeaux B.	Nigrosine W.S.

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27 ST. SACRAMENT ST. - MONTREAL.

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New Products will be added from time to time.

the paper they are receiving on contract, and only a spasmodic demand of light volume is arising for prompt shipments.

The newsprint market has again weakened in so far as regards spot supplies. Sales of news in standard rolls have been reported at 7.50 cents per pound at mill and there have been rumors of offerings by some manufacturers at even cheaper prices. The spot basis is well maintained at around 6.50 cents, and judging from the reports emanating from producing quarters, publishers can expect to pay more for their print paper after the turn of the year. The consumption of newsprint in New York is heavy but it is authoritatively understood that it has fallen off considerably throughout the country. One local afternoon paper yesterday exceeded all previous records in the amount of advertising carried in a single issue, printing 294 columns of paid display advertising which required an issue of 40 pages. Moreover, the paper in question has the largest circulation of any New York daily. According to a cablegram received several days ago from a New York bank's representative in Copenhagen, Americans are purchasing newsprint in Finland in large tonnage, it being asserted that orders have thus far been placed for 40,000 tons. The same report states that Norwegian and Swedish paper manufacturers have curtailed production one-third and are said to be contemplating a further reduction in operations.

There is little change in book papers. Current demand is limited but prices hold fairly steady excepting for an occasional sale at sharp recession, and mills are mostly disposing of the bulk of their output on contracts. Tissues and wrappings are holding their own in point of activity and there is relatively a better call for these grades of paper from the transient trade than others, this evidently being due to the near approach of the Christmas holidays when the consumption of both tissue and wrapping reaches its crest. Fine papers are moving slowly, especially the high qualities, and quotations are characterized by easiness.

Boards continue weak and in lax demand. Most manufacturers withdrew prices early this week and have kept out of the market presumably in an effort to stabilize conditions. Boxmakers are doing little buying and the retirement of sellers consequently had no visible influence on the market. Plain chip board is quoted at around \$60 a ton at mills and filled news board at \$67.50 to \$70.

**GROUND WOOD**—There is a lack of important activity in ground wood and yet an undertone of stead-

iness marks quotations. Both board and paper manufacturers are keeping very much out of view as buyers and the little business being done is of scattered character and seldom involves large tonnages. Prices on domestic ground wood of prime quality for prompt delivery range around \$125 per ton at pulp mills, and while imported ground wood is selling at as low as \$110 ex dock, buyers frankly acknowledge having difficulty in securing domestic pulp in sizable amounts even at \$125. According to all reports, grinders are succeeding in piling up but little surplus, which would indicate that the great bulk of present production is quickly finding its way into consuming channels.

**CHEMICAL PULP**—Paper manufacturers are holding off in buying chemical wood pulp in the same manner that they are curtailing purchases of other raw materials and the market is a bit duller. Transactions are of spasmodic character and seldom involve large tonnages for the reason that consumers are absorbing supplies only when immediately in want of pulp. Prices are maintained in most cases although there is an easing tone displayed by some grades, notably kraft and the lower qualities of unbleached sulphite. Arrivals of pulp from Europe at this port during the present week have been larger than for some time and this also has a weakening influence on matters generally, although importers as well as domestic producers are not pressing buyers and are mostly waiting until consumers show more inclination to absorb supplies.

Imports at New York during the week included 17,210 bales from Gothenburg, 29,900 bales from Donajo, 3,720 bales from Danzig, 9,460 bales from Christiania, and 2,175 bales from Rotterdam.

**RAGS**—The market for papermaking rags is in an inactive state. There is no concerned demand for any grade and most descriptions are extremely hard to sell in any worth while quantity for the reason that paper mills are refusing to buy on a declining market and are more concerned about reducing present stocks than in augmenting them. Dealers assert that prices on rags have dropped to levels where there is scarcely any profit in handling some grades and that as a result collections have decreased to an apparent extent, which, they claim, will certainly rebound against consumers in due time. Nevertheless, everything would appear to indicate that there are sizable accumulations in dealers' and packers' hands and the probabilities are no such thing as a scarcity will develop. With business at a minimum, it is indeed difficult to ascertain what prices are; in fact, there is not enough trad-

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## SCREEN

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ing in many kinds of rags to establish market levels. Old whites are down further to as low a basis as 10 cents per pound at shipping points for No. 1 repacked whites, and repacked old thirds and blues are available at 3.75 to 4 cents. Roofing rags have sold down to 1.25 cents a pound at shipping points for No. 1 packing and at a couple of dollars per ton under this figure for No. 2 grade. New cuttings are relatively steady but even these are commencing to recede in price, reports having been heard of sales of No. 1 white shirt cuttings to mills at 22.50 cents a pound at shipping points.

Arrivals of foreign rags at this port this week included 918 bales from Antwerp, 268 bales from Nantes, 78 bales from Southampton, 98 bales from Copenhagen, 28 bales from Liverpool, 94 bales from Havre, and 71 bales from Belfast.

**PAPER STOCK**—New low prices have been recorded on most grades of old paper this week and the tone of the market continues weak with the aggregate movement of supplies toward mills of small importance. Board mills are doing very little buying, some of them being closed down and most others operating only on reduced schedule, and on this rests the prevailing condition of the waste paper market. No. 1 mixed paper has been purchased at as low as 45 cents per hundred pounds f.o.b. New York, fold d newspapers at 115 cents a pound at shipping points, heavy No. 1 book stock at 1.90 cents, old No. 1 kraft at 4 cents and white blank news cutting at 4.50 cents. Shavings are slightly off in price at about 8.50 cents for No. 1 hard white and 7.50 cents for No. 1 soft white shavings, the reason

this class of stock is relatively higher in value than others being that the packers are holding shavings while exerting every effort to move other grades.

Receipts of miscellaneous foreign paper stock at New York this week included 837 bales from Belfast, 151 bales from Antwerp, and 138 bales from London.

**OLD ROPE AND BAGGING**—There is practically no buying interest shown by papermakers in old bagging and prices are weak and on nominal levels. It is known that No. 1 serap can be purchased at 2 cents a pound at shipping points, roofing bagging at 90 cents a hundred pounds and No. 1 gummy at 2.50 cents, and the probabilities are firm bids could secure supplies at lower figures. Old rope is quotably steady at 5.75 to 6 cents a pound and is in moderate call. Mixed strings are down in price to 2.50 cents per pound.

Imports of old rope at this port this week included 175 coils from Copenhagen, and of old bagging 191 bales from Antwerp and 289 bales from Copenhagen.

#### USEFUL CATALOG ON BELTING.

The Graton & Knight Manufacturing Co., Worcester, Mass. have issued a catalog on Standardised Leather Belting. They have instituted a rather novel idea in listing the more important drives of pulp and paper mills and setting the approximate horse power required and the conditions under which the belt operates and specifying the character of belt best suited to these conditions. The illustrations showing the different types of drives are very clear and should be readily understood by any millwright. The other information and calculations should also be of considerable use.

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# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., November 25, 1920.

No. 48

## TABLE OF CONTENTS

### Editorial:

Talking about the tariff .....	1205
The boundary of Labrador .....	1205
Pace maker sets print paper price .....	1206

### Special Articles:

The Canadian pulp and paper industry and its relation to the tariff .....	1207
New forests for Nova Scotia's barrens .....	1213
Is collecting waste material to stop .....	1214

### News of the Industry:

Kinleith Paper Mills, Ltd. extending .....	1211
A visitor from Sweden .....	1211
Reduces operating time .....	1212
Would trade pulpwood for pork .....	1212
Will use a lot of paper .....	1213
Will use hardwood for groundwood pulp .....	1214

Another pulp mill for B. C. ....	1214
British trade news .....	1215
Vocational education at the Champion Fibre Co. ....	1217
What the technical association is doing .....	1217
United States notes .....	1218
Pulp and paper news .....	1219
President of Whalen Mills makes inspection .....	1220
Want timber regulations changed .....	1220
Industrial items .....	1221

### Miscellaneous Information:

Saving timber at the stump .....	1212
Review of recent literature .....	1216

### The Markets

Canadian trade conditions .....	1221
New York markets .....	1222

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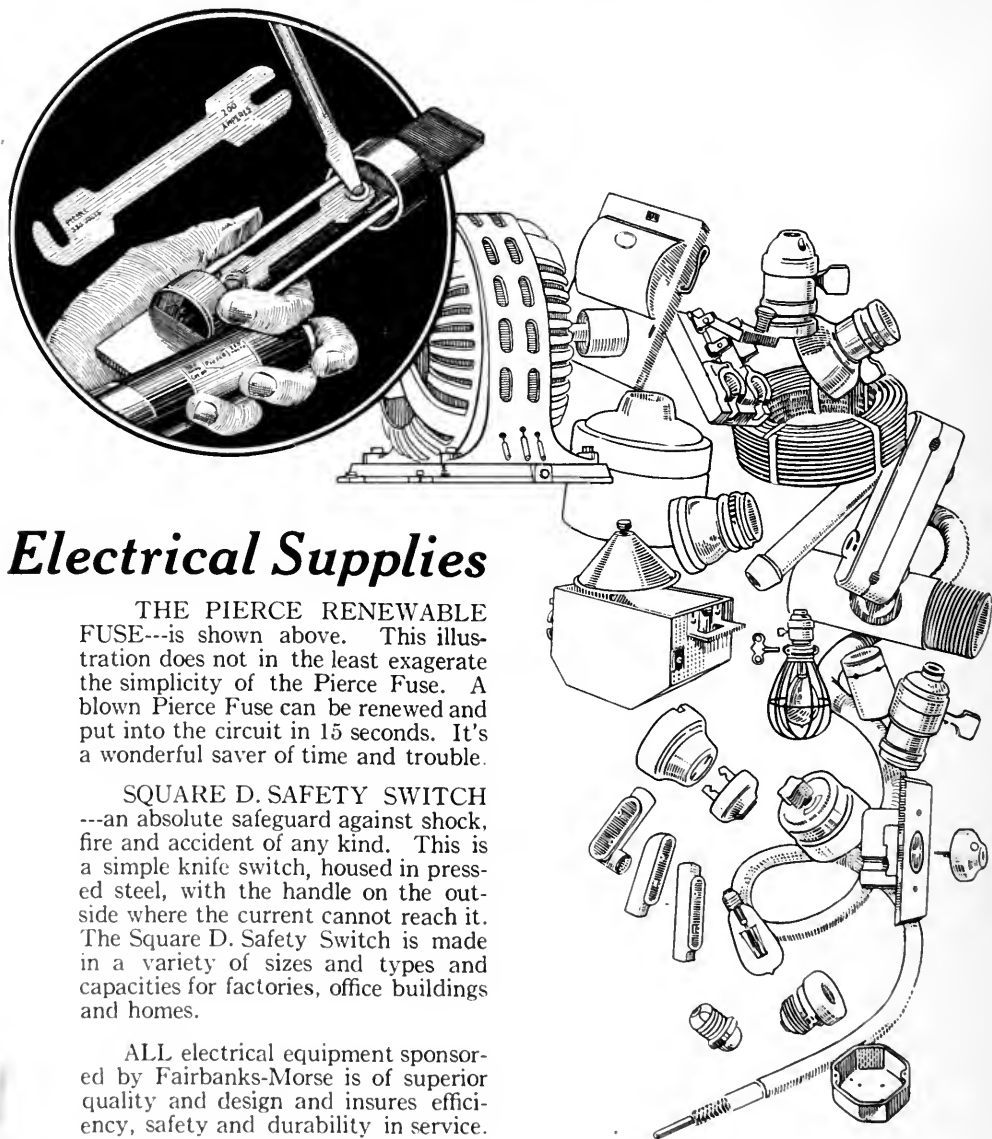
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J. NEWELL STEPHENSON M.S. Editor

The editor cordially invites readers to submit articles of practical interest; when on publication, will be paid for subscription to any address in Canada, United States and British Empire, \$5.00 yearly. Other Countries Postage Extra. Single copies, 15 cents.

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# FAIRBANKS-MORSE



# -:- EDITORIAL -:-

## *TALKING ABOUT THE TARIFF.*

Nearly everybody in Canada has some ideas with regard to the Tariff. A good many of those which have been voiced seem to want a minimum duty on material they import and a maximum on what they manufacture. From reports of hearings of the commission investigating tariff matters it would seem that practically everybody in Canada favors a moderate degree of protection for Canadian industries. This attitude indicates an appreciation of and a fairmindedness with regard to the position of others. For instance a boot and shoe man and his employees desire a sufficient duty to put their business on at least an equal footing with that of similar manufacturers in other countries, particularly in such times as his neighbors might have a dull period and desire to dump quantities of the product in the Canadian market. He naturally wants to keep his plant and his employees as busy as possible. On the other hand, when he buys a suit of clothes or a machine he wishes to get it at the best price. He realizes, however, that if there were not sufficient duty to protect the textile and clothing manufacturer and if boot and shoe makers should in consequence buy the majority of textile products in another country, the textile industry would seriously suffer and through lack of employment and lowering of wages these potential buyers of his own product would be unable to make purchases in normal volume. The same argument applies all round the circle and calls for just such a tariff as the government evidently proposes to maintain, namely, that every Canadian industry is entitled to so much protection as will keep it employed to the maximum with a reasonable return on the investment and with the ability to pay satisfactory wages.

There seems to be a little opposition to a fair degree of protection from the tariff, which must be considered in this light quite apart from the necessity of a tariff for revenue purposes. The opposition has come principally from farmers who evidently have not fully considered that some degree of protection is not only desirable but necessary for the well being of many of their fellow-citizens and indirectly, themselves. Agriculture is a basic industry, and with the exception perhaps, of fertilizer, having its entire raw material in its own possession, the raw material for the farmer's product being his land, his seed and his labor. His market is at home, across the border and overseas. The majority of farmers are dependent

largely upon their neighbors for the purchase of their product. If their neighbors in the home town or the neighboring city are not profitably employed, how can the farmer sell his produce? Furthermore, if the farmer must pay a few dollars more for a plough or a tractor of Canadian manufacture made by men to whom he sells his potatoes there has been no suggestion that he should not charge for his potatoes a price which will cover the cost of his seed, his labor, the overhead on his investment in land and machinery and allow him a profit on his endeavor.

To our mind there is no argument against a rational tariff but it is a matter which should be carefully studied and recommendations made on the basis of scientific investigation and an unbiased calculation.

## *THE BOUNDARY OF LABRADOR.*

Labrador is a narrow strip of the Atlantic coast of North America running northward from the Strait of Belle Isle to Cape Chidley which is the southern gate of Hudson Strait. The width of this strip varies according to present maps, from practically nothing at the north to about 50 miles opposite Newfoundland. This boundary is in truth an imaginary line because it has never been definitely surveyed and marked. It will be recalled that Labrador comes under the jurisdiction of Newfoundland which is still a colony of Great Britain. While this trip of wellnigh barren country was principally useful as furnishing sufficient ground for fishermen to go ashore and dry and salt their catch, there was little occasion for dispute as to the western boundary, but now that pulpwood has been discovered just behind the ridge that lies a little way back from the Atlantic, and other resources are supposed to exist in this region, there is a movement to have the boundary definitely determined, otherwise it will not be possible to know to whom customs and other tariffs should be paid. The matter of this boundary is one to be decided by the Privy Council and the arguments in the case were supposed to have been made out, at least plenty of time has been given for their preparation. It seems, however, that not very much has been done.

The matter has been brought to a head by the present world shortage of paper with its attendant investigation of new areas as possible sources of pulpwood. Among these investigations was an air-plane survey of the land lying in the interior of the Labrador Peninsula, notably along Hamilton inlet and river. Reference to the forest

resources of Labrador was made in the *Pulp and Paper Magazine* a few weeks ago. The promoters applied to the Newfoundland Government for these timber limits and this brought up again the question as to whether the country referred to was actually owned by the Colony. It is understood that representatives of Canada and Newfoundland are in London with the object of drafting their respective claims to this territory for presentation to the Privy Council.

The question is one that is of peculiar interest to Quebec as the most eastern province and the one which shares the boundary with Labrador. The question becomes the more significant when it is considered that the future development of the pulp and paper industry in Quebec must necessarily open up the country north of the St. Lawrence. When we get a little way above the 52nd parallel, the height of land is reached, north of which, some river systems flow into the Atlantic and others into Ungava Bay. The head waters of rivers flowing into the Atlantic, such as the Hamilton, are sometimes 400 or 500 miles from the ocean. The determination of the boundary then becomes more important since timber naturally lies in the river valleys, which in large part cross it. It will be recalled that in the early days there was bitter strife among the North American colonies because of the overlapping claims due to indefinite boundaries, especially towards the West. The disputes were not restricted to the English colonies but involved also the French settlers who occupied the country down the centre of the continent, particularly along the Mississippi and the contact of these settlers and the garrisons of the French and English forts has made the subject for many pages of American history. It is well indeed that the present dispute is to be settled with the consent of both parties by the Privy Council.

For those who are interested in the history of the boundary of Labrador, we quote the following brief review from a dispatch from St. John's, Newfoundland.

"This line has never been laid down by actual survey and its various definitions as given in documents issued at intervals in the last century and a half are so vague that government officials do not know just how much of Labrador belongs to Newfoundland and how much to Canada.

The coast of Labrador was annexed to Newfoundland in 1763. Ten years later, owing to difficulties arising out of grants made to a number of persons under the French rule, it was changed to Canadian jurisdiction. In 1809 it was again transferred to Newfoundland and has since been attached to this colony.

The difficulty arises over different interpretations of the words "coast of Labrador." One view is that Newfoundland can claim only the coast between Blanc Sablon and Cape Chidley, with perhaps a half a mile inland, and that the rest of Labrador belongs to Canada. As defined in the letters patent constituting the office

of Governor of Newfoundland, the boundary was described as a line drawn between Blanc Sablon and Cape Chidley, which would pass through the ocean in certain sections and leave large areas of the coast to the westward of the line and therefore not under Newfoundland jurisdiction.

Many Newfoundland officials hold to the view that the correct delimitation was made in a sessional paper issued in this colony in 1864. Under the phraseology of this document Newfoundland would be entitled to thousands of square miles of the interior of the Labrador Peninsula in addition to the coast."

---

#### PACE MAKER SETS PRINT PAPER PRICE.

The International Paper Co., whose paper mills are all in the United States, has announced that the price of newsprint for January, February and March will be 6½ cents a pound, or \$130 a ton. This is an increase from 6 cents and \$120 respectively. The International operates mills of practically every degree of efficiency, some making their own pulp, others getting it from other mills of the company. Some of the wood is cut from the company's limits and some is bought at very high prices. Probably no other company so well represents the entire newsprint industry.

It seems likely that Canadian mills will "ride on the band wagon". Whether domestic prices will go to the International's figure cannot be ascertained as we go to press. Certainly there is no feature of the market for newsprint to suggest any other course. With the enormous demand for this grade a much higher price could doubtless be obtained for the whole output. A philanthropic disposition or a contract in force seem to be the only reasons for a lower price. We believe the increase will hardly more than cover increased manufacturing costs to the mills.

---

#### COBWEBS.

Congratulations to Mr. B. E. Hutchinson, treasurer of the American Writing Paper Co. on being elected president of the Holyoke Chamber of Commerce.

---

A. L. Dawe and Ellwood Wilson represented Canada at the christening of the youngest child of the American Paper and Pulp Association—the Woodlands Section.

---

The Red Cross Society is trying to raise a fund to keep a few of the thousands of suffering children in Europe from actual starvation. Send your check to 15 Belmont Park, Montreal. Make your old overcoat do this winter and save a couple of kids from starving. Send them dollars for doughnuts.

# The Canadian Pulp and Paper Industry and Its Relation to the Tariff

**Statement submitted by the Canadian Pulp and Paper Association to the Committee of Cabinet Ministers appointed to inquire into the Operations of the Canadian Customs Tariff, at their Hearing in Montreal, Nov. 15, 1920.**

## The Pulp and Paper Industry.

The latest available census report issued by the Department of Trade and Commerce, covering the year 1918, gives the following summary of the pulp and paper industry:—

*Employment.*—25,683 persons, exclusive of woodsmen who, at certain seasons of the year, number as many more.

*Wages and Salaries.*—\$26,974,225.

*Capital Invested.*—\$241,344,704, distributed as follows:—

of which imports representing \$9,345,125 came from the United States, \$315,245 from the United Kingdom, and \$310,286 from other countries.

Imports for the years 1913 to 1920, inclusive, are given in the following statement:—

Years	Total Imports of Paper	From United Kingdom	From United States	From Other Countries
1913	\$8,233,902	\$1,714,694	\$5,688,903	\$800,305
1914	7,920,627	1,615,830	5,371,367	933,430
1915	5,681,009	1,193,068	4,013,177	477,764
1916	4,676,904	803,715	3,726,087	147,102
1917	6,815,471	779,156	5,841,437	194,878
1918	7,463,466	539,869	6,674,915	248,682
1919	8,911,883	213,793	8,119,485	218,605
1920	9,970,656	315,245	9,345,125	310,286

	In Paper Mills	In Pulp Mills	In Pulp and Paper Mills	In all classes of Mills
British Columbia		\$17,113,569	\$25,292,119	\$ 42,705,988
Ontario	\$ 5,341,192	21,198,866	62,036,749	88,576,807
Quebec	7,179,573	21,990,175	69,786,548	101,456,296
New Brunswick		7,852,225		7,852,225
Nova Scotia		753,388		753,388
Totals	\$12,520,765	\$71,708,223	\$157,115,716	\$241,344,704

*Value of Products.*—\$118,203,795.

*Value of Exports.*—\$63,506,222.

These figures, it should be noted, apply to the state of the industry as it was in 1918. A conservative estimate of its growth in the intervening two years shows the capital investment to have increased to an amount exceeding \$300,000,000, and the number of employees, the amount paid in salaries and wages, the value of the products and of the exports to have increased proportionately. Exports of pulp and paper reached a total value of \$104,635,338 for the fiscal year ending March 31st, 1920, and of \$87,243,476 during the first six months of the current fiscal year.

## Tariff on Paper.

Foreign manufactures of paper and of paper passing through a secondary process, for the most part, upon entering Canada are required to pay a Customs tariff ranging from 10 to 25 per cent. *ad valorem*, according to classification. There are a few exceptions which are admitted free of duty. Imports of paper are, generally speaking, covered by items 192, 196 and 197 of the Customs Tariff.

British manufactures of paper are required to pay upon entering Canada a duty of 15 per cent., and in the case of foreign goods, 25 per cent. Where goods have been subjected to a finishing room process, the tariff is increased to 22½ per cent. on British goods and 35 per cent. on Foreign.

## Imports.

There is a considerable volume of imports of paper commodities covering a wide range of varieties, many of which are also produced in this country. For the fiscal year ending March 31st, 1920, the total imports of paper of all kinds were valued at \$9,970,656,

Among the larger items of paper imported during the fiscal year 1920 were:

Cardboard, not pasted or coated	\$429,963
Cardboard, pasted and coated	91,248
Strawboard, newsboard, chipboard and other board, n.o.p., not pasted or coated	370,321
Book and litho paper, coated, flint and foil coated paper	61,394
Book and printing paper, not coated, suitable for printing of books, papers and catalogues	615,999
Cloth lined and gauze lined packing papers	10,738
Greaseproof, parchment, glassine, onion skin and manifold paper, not coated or embossed	38,869
Vegetable parchment paper	80,015
Waxed paper, printed or not	92,078
Wrapping paper, kraft	52,727
Wrapping paper, all kinds, n.o.p.	366,331
Bond and ledger paper, writing and envelope paper, uncut	78,802
Pads, not printed, papier mache ware, n.o.p., papeteries, and ruled or plain, bordered and boxed or wrapped stationery	20,330
Envelopes	168,733
Plotting paper, not coated or enamelled	119,738
Plotting paper, not coated or enamelled	93,546
Cigarette paper in rolls or packets	147,461
Crepe, decorated, ornamental or plain, in rolls or webs and paper napkins, plain or decorated	46,676
Hanging or wall paper, including borders	355,972
Hemp paper for gunwads	115,572
Paper matrix, not being tissue for use in printing	35,321

Paper, photographic, plain, basic and baryta coated, adapted for use exclusively in the manufacture of albumenized or sensitized paper . . . . .	201,061
Roofing and building paper, n.o.p. . . . .	403,555
Toilet paper and paper towels in rolls or sheets, perforated or not . . . . .	104,076
Bags or sacks, printed or not . . . . .	112,247
Boxes or containers, printed or not . . . . .	1,039,259
Paper tubes or cones of all sizes adapted for winding yarn thereon . . . . .	51,665

Except in the case of newsprint paper, which at the present time occupies an unusually strong economic position, Canadian paper manufacturers, despite the tariff, are, it will be observed, confronted with keen competition in their home market, especially by United States manufacturers. They are practically shut out of the American market for higher grade papers by the prevailing American tariff of approximately 25%, and are met with competition from the American manufacturers in other foreign markets.

**Newsprint.**

Canada produces in the neighborhood of 800,000 tons of newsprint paper a year, the quantity being constantly augmented by mill expansion. In the first nine months of the current calendar year, Canada produced 666,735 tons, of which 100,292 tons, or 15 per cent., was consumed in Canada. The principal export market is the United States, where, at the present time, print paper valued at not more than 8 cents a pound is admitted free of duty.

While the newsprint trade is to so large an extent export, Canadian consumers benefit by the large production, since the greater the production the more economically can manufacturing be carried on. If the newsprint industry were solely dependent on the home market the demand would be insufficient to maintain any considerable number of mills and the price would necessarily be higher. One company alone, at the present time, produces sufficient paper to equal the total Canadian demand. Canadian consumers of newsprint obtain their supplies at as low or lower prices than those of any other country. A Canadian consumer using no more than 100 tons of paper a year, pays no higher price, and sometimes less for it than American consumers using from 40,000 to 50,000 tons a year. Canadian newsprint is sold abroad in competition with the United States, England, Scandinavia and Germany, competition both as to price and quality being keen.

Among the factors that have contributed to the enormous expansion of the Canadian newsprint industry may be mentioned Canada's extensive pulpwood areas and cheap water-powers, provincial legislation designed to encourage home manufacture and discourage the exportation of unmanufactured logs, the free market for newsprint in the United States, and the standardization of methods employed in production, the last being by no means the least important.

Modern paper-making machines now employed in Canada are built with a view to producing under practically continuous operation a roll of paper that will divide into the required units without waste and without the loss of time formerly incurred in changing from one width to another and one weight to another in the grade of paper produced. This feature has an important bearing on the economic production of paper.

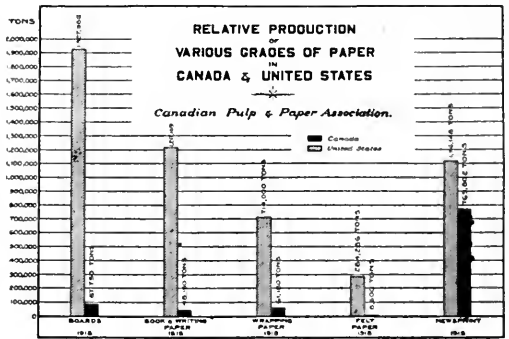
**Other Grades Than Newsprint.**

In the calendar year 1919, Canada produced 769,802 tons of newsprint paper compared with 1,116,148 tons produced in the United States, and in respect of newsprint production Canada is fast overtaking that country.

In grades of paper other than newsprint, Canada compares less favorably with the United States. In 1918, Canada produced 48,150 tons of book and writing papers, or the equivalent of 12 pounds per capita of population. The United States produced 1,217,169 tons, or the equivalent of 25 pounds per capita.

Of wrapping paper, Canada produced 61,180 tons, or 15 pounds per capita; the United States, 714,000 tons, or 14 pounds per capita.

Of felts and building paper, Canada produced 8,600



This chart illustrates the disparity which exists between the United States and Canadian markets for the several grades of paper, and indicates the advantages enjoyed by the producers for a market of 105 million people, as compared with a market of eight millions. The disparity in newsprint is less marked because in that grade of paper Canadian manufacturers are not dependent on the home market.

tons, or 2 pounds per capita; the United States, 284,286 tons, or 5½ pounds per capita.

Of boards, Canada produced 87,749 ton, or 22 pounds per capita; the United States, 1,927,986 tons, or 33 pounds per capita.

From this it will be seen that Canada's annual production of book and writing papers is only 4 per cent. of that produced in the United States; of wrapping paper only 8½ per cent.; of felts and building paper only 3 per cent., and of paper boards only 4½ per cent. of the American production.

So far as these branches of the industry are concerned, Canada is far behind her principal competitor, and her paper-making industry needs every assistance and encouragement possible to ensure continued development, and to overcome the handicap of increased capital expenditure.

It should be noted, also, that while paper manufacturers benefit to some extent by the tariff, they are also large contributors to the tariff revenues as they pay duty on much of their raw materials as well as upon their machinery, a great deal of which is unobtainable in this country. These include coal, sulphur, resin, alum, pulp, coloring substances and various other commodities.

Customs duties imposed upon paper making machinery brought into Canada increase the amount of capital required to equip a Canadian paper-mill by from 25 to 35 per cent, as compared with the amount of capital required for the equipment of similar mills in

the United States, a fact which is entitled to receive consideration in any estimate of the comparative ability of American and Canadian paper manufacturers to compete on even terms in the same market. At present some Canadian manufacturers are experimenting in a large way in the production of paper-making machines, giving promise of the speedy development of a new and important Canadian industry as the direct result of the increased production of paper.

#### Book and Writing Papers.

One difficulty in meeting the domestic market for book and writing papers is found in the great variety of grades that are demanded, some of the quantities being so small as to make economic production practically impossible. The 48,000 tons of book and writing papers produced in Canada in 1918 included, it is estimated, some 100 different varieties, which were made to meet the requirements of the Canadian consumer. The cost of production on a small output is naturally greater than that of a large output, and in this respect Canadian mills are at some disadvantage as compared with some of their foreign competitors. In this connection a comparison of the machines employed in the manufacture of book paper in Canada with those employed in producing similar grades in the United States discloses that ten mills in the United States, operating 71 machines, produce 1,697 tons of book paper a day or an average of 23.9 tons per machine. This tremendous output is absorbed by magazines and periodicals, among which may be mentioned two publications—The Ladies' Home Journal and the Saturday Evening Post—whose Canadian circulations alone, although printed and published in the States, are reported to absorb more paper than do all the Canadian periodicals of a like character combined. In this instance the advantage of employing machines constantly on one grade and size of paper is with the American manufacturer, the limited market in Canada for this grade of paper making frequent changes and delays in the operation of machines inevitable and thereby enhancing the cost of production appreciably. Taking these facts into consideration, the average price of these grades of paper in Canada bears favorable comparison with the average price at which they are sold in the States.

It is open to question whether the magazine and periodical press of Canada is not entitled to some greater protection against the enormous flood of foreign publications now finding its way into Canada than is afforded by the slight advantage accorded to them under the postal regulations.

Notwithstanding the difficulties enumerated, Canadian manufacturers have made every effort to cater to all domestic requirements and are constantly evolving new lines to take the place of paper formerly supplied from foreign markets. There has recently been added to Canadian production the following grades: Deckle-Edged Antique Laid and Wove Book Papers, Antique Laid and Vellum Writing Papers, Imitation Handmade Paper, Deckle-Edged Cover Papers, Pure Vegetable Parchment, Fancy Wrapping Papers, Glassine Paper, Waterproof Papers, Featherweight Book, High-grade Colored Covers, Carbon Paper, as well as a large variety of writing papers in which the skill of the Canadian paper-maker has been successfully matched against that of his United States and European competitors.

None of these developments, in all probability, could have taken place had foreign paper-makers had free access to this market. An illustration may be made in connection with the production of Blue Print Paper which enters Canada free of duty. Apart from the loss of revenue to the Government, no Canadian paper manufacturer has felt sufficiently encouraged to go to the heavy expense of experimenting and producing a paper of a quality suited to the requirements of the Blue Print manufacturers in the face of unrestricted foreign competition.

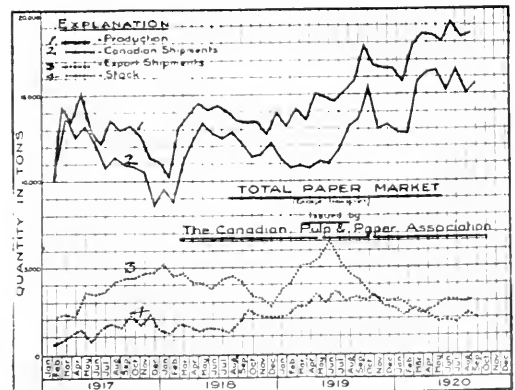
From the point of view of the consumer of paper the manufacturers have paid special attention to the domestic market, notwithstanding charges to the contrary that have been made. A study of the facts regarding the volume of production of Book Papers shipped to Canadian consumers compared with the amount exported leaves no cause for complaint.

In view of the worldwide shortage of paper during the current year it would not have been difficult to dispose of the extra Canadian production abroad and at a higher price had the mills been so inclined, but the domestic market has always had first call.

#### Paper Boards.

Mention has been made of the Board mills, of which Canada has 11, producing some 90,000 tons per annum of various grades in comparison with the production of 1,927,986 tons in the United States, less than 4½ per cent.

The United States market for paper boards is unstable and subject to frequent and wide fluctuations. American manufacturers look upon Canada merely as affording them an additional and temporary outlet for their products when, by reason of over-supply and falling prices, they find themselves with surplus stocks on hand. At other times they ignore the Canadian market. The tariff not only enables the Canadian paper board industry to exist, but it also ensures to the Canadian consumer an adequate and constant supply at a fair price, instead of leaving him to the vagaries of foreign producers who, under normal conditions, do not want his trade. The industry is a growing one. New uses for paper boards are constantly being found, such as the manufacture of various kind of paper containers, paper barrels, etc. It would appear to be



This chart shows the total production of all grades of paper (except newspaper) in Canada, 1917-1920, the total shipments to Canada, the total export shipments and stocks on hand.

economically sound that Canada should be placed in a position to take advantage of these developments and, as far as possible, to manufacture her entire requirements of them at home.

Nearly all of these mills utilize waste paper in the manufacture of their product, thereby creating a market for a waste material which would otherwise be shipped out of the country in an unmanufactured form as waste. The quantity at present produced in Canada is not large, but covers as wide a variety of grades as may be found in a small market and is constantly increasing.

#### Felt Paper.

Felt paper is a paper made from waste rags with the addition of certain substitutes, and when saturated with tar is used to make roofing paper. It is thus a means of using up the waste products such as old woollen and cotton rags, which, without the facilities for making them into felt paper, would be shipped to other markets; giving a smaller return to the consumers.

The manufacture of felt paper is probably one of the oldest branches of the industry in Canada, and has led to the establishment of many saturating plants to supply the Canadian demand for roofing papers.

It is safe to say that the maintenance of a tariff on this branch of the industry has resulted in the production of sufficient felt paper to meet all the home requirements. It has also led to the development of a considerable amount of new business which it is reasonable to suppose would not otherwise have come to Canada. Special reference might be made to floor covering, which is now used in the preparation of congoleum and other oil-covered linoleums such as are now produced in Canada.

On account also of the scarcity of cedar shingles, tarred felt shingles are coming into greater use.

Taking into consideration all of these facts, the felt makers of Canada, therefore, urge that the present tariff be maintained as a protection to what is a very valuable asset to Canada in the utilization of waste products.

#### Wrapping Papers.

The production of wrapping papers, both manila and kraft, is of great importance to the commercial life of Canada. The Canadian mills engaged in this class of production have made and are making every effort to meet all the demands of the Canadian market, so that wrapping paper is available to every merchant in every town, city and village of the Dominion. While the production of wrapping paper in Canada does not begin to compare as to quantity with that produced in the United States, being, in fact, only 8½ per cent of the United States production, yet the per capita consumption in the two countries is about the same, amounting to about fifteen pounds per annum. The Canadian manufacturers therefore feel justified in asking that no change be made in the present tariff on wrapping papers.

#### Toilet, Tissue, Crepe and Paper Towels.

The manufacturers of toilet, tissue, crepe and paper towels comprise a very important part of the paper industry and have built up a wide connection throughout Canada for the sale of their products.

They serve a market which is of necessity small and does not compare with the tremendous market of the United States where tissue and toilet papers are produced in large volume, one mill alone turning out some 1,000 cases of toilet paper per day.

Statistics prepared by the Federal Trade Commission

show that the United States during the war 1919 produced 155,400 tons of tissue, crepe, toilet papers and paper towels, in some 85 mills engaged in this class of business.

This market, therefore, on account of the small runs does not hold out much attraction to the United States manufacturers except in times of depression when it has invariably been used as a dumping ground to the disadvantage of the Canadian manufacturers.

In support of this statement, the following letter from a prominent jobber in the United States, in which an offer is made to use Canada in this way, is submitted:—  
"The H. Norwood Ewing Co.,

"New York, October 18th, 1920.

"Gentlemen:—

"Upon the eve of our Presidential election, we find the paper business rather quiet. A Republican victory seems assured, which means a boom at rising prices. Manufacturers do not desire to cut prices and retard this movement, thus we are willing to sell a part of our tonnage in Canada at prices below the manufacturing costs.

"We, therefore, offer you our Liberator four-ounce crepe at \$4.00 f.o.b., Syracuse, N.Y. Our Canadian customers do not like to pay exchange, and partly to offset this we shall deduct Ten Per Cent, from the face of the invoice, which saves duty for you. You would thus remit to us at \$3.60 Net Cash Ten Days from the date of the invoice in New York Exchange.

"We are sending one sample roll of Liberator, and when we say that the market price is \$4.50, you can see that we are offering you a genuine bargain. If you prefer a different label, we shall be pleased to furnish a one color.

"Yours very truly,

"The H. Norwood Ewing Co."

#### Woodpulp.

Woodpulp is imported into Canada under Item 200 of the Customs Tariff and is subject to a duty of 15, 22½ and 25 per cent respectively. For the last fiscal year, imports of this character amounted to 26,458,069 pounds of pulp, valued at \$617,920. They were made up as follows:—

	Lbs.	Value
Bleached sulphite pulp . . . . .	195,388	\$ 10 479
Soda pulp . . . . .	1,654,209	77,056
Unbleached sulphite pulp . . . . .	23,448,342	477,070
Woodpulp, n.o.p. . . . .	1,160,120	53,315
Totals . . . . .	26,548,059	\$617,920

With the exception of 7,164 pounds of pulp, valued at \$1,870, imported from the United Kingdom, the entire imports were derived from the United States.

Some Canadian mills have United States affiliations or are owned by companies operating mills in both countries and have interlocking operations. Where pulp is imported and used in the manufacture of paper for export, a rebate of duty is allowed on the imported pulp when the finished paper is exported.

Some mills produce pulp exclusively, some paper exclusively, and some both pulp and paper. In the latter class of mill, more pulp is usually produced than is needed for its own use, leaving a surplus for the general market.

The United States, to which the most of our pulp exports are sent, admits woodpulp of all descriptions free of duty. Last year Canada exported woodpulp to the total value of \$41,383,482, of which \$31,316,753 represents pulp exported to the United States, \$5,014,400 pulp exported to the United Kingdom, \$3,709,968 pulp

exported to Japan, and \$1,342,361 pulp exported to other countries. These exports were made up as follows:—

	Cwts.	Value
Sulphate (kraft) . . . . .	2,518,022	\$8,327,045
Sulphite, bleached . . . . .	1,220,764	6,291,452
Sulphite, unbleached . . . . .	4,863,156	18,381,566
Mechanically ground . . . . .	6,787,640	8,383,419

Total . . . . . 15,389,582 \$41,383,482

Keen competition is offered in the world's pulp markets by Sweden, Norway, Finland and, latterly, Germany. In normal times Russia and Austria also produce woodpulp in large quantities. Conditions prevalent during the war period helped to advance, to a considerable extent, Canada's position as a pulp-producing country.

#### Conclusion.

In conclusion, it may be said that, generally speaking, the Canadian pulp and paper industry is in a healthy state and is growing rapidly; that it offers a reasonably attractive field to foreign and domestic capital; provides a means for the favorable utilization of Canada's forest products and water-powers as well as of much waste material that would otherwise have little value; gives remunerative employment to a large number of workers; supplies a domestic need at reasonable cost; contributes in no small degree to the federal and provincial revenues; performs an important national service in extending Canada's exterior trade, and is paving the way for the scientific conservation and replenishment of our forest wealth. The industry is one that goes out into the wildernesses and converts waste places into flourishing industrial communities, leading to the construction of railways for carrying materials and supplies, as well as the establishment of contingent industries. It has by no means reached the zenith of its development, but is capable of practically unlimited expansion, unless retarded or held back by restricting government regulations or adverse tariff legislation. It undoubtedly owes a considerable measure of its present prosperity to the protective tariff policy prevailing in the Dominion for the past forty years.

Submitted on behalf of the Canadian Pulp and Paper Association.

S. J. B. ROLLAND,

Chairman Committee on Tariff.

A. L. DAWE,

Secretary.

Montreal, November 15th, 1920.

#### KINLEITH PAPER MILLS, LIMITED, EXTENDING

The Kinleith Paper Mills, Limited, of St. Catharines, Ontario, are enlarging one of their buildings by an addition measuring about 75 x 90 feet. The purpose of the enlargement is to lengthen out the paper machine, by doing which the company expect to increase their production by approximately 25 per cent. The estimated cost of the improvement, which should be completed by the first of next year, is in the neighborhood of \$75,000.

William I. Bishop Limited, Montreal, have been awarded the contract for the building of the entire plant including the necessary wharves, docks, etc., for the Three Rivers Pulp and Paper Company Ltd., at Three Rivers, Quebec. For the Three Rivers Pulp

and Paper Co., Ltd., this work will be under the direct supervision of Mr. R. J. Whyte, Managing Director and Mr. J. J. O'Sullivan, Engineer in charge. William I. Bishop Ltd., includes the Foundation Company and the Ambursen Hydraulic Construction Co.

#### A VISITOR FROM SWEDEN.

Mr. H. Graeslund, a graduate in business administration from the University of Stockholm and at present associated with Baron Mannerheim, whose visit to Canada early in the year will be recalled by many readers of the magazine, called at the Garden City Press last week. Mr. Graeslund explained in an interesting way the two forestry courses given by the University of Stockholm. He stated that in the first place the number of students admitted is limited to the probable number of opportunities for their employment so that there is considerable competition for the opportunity of entering and a high standard of men and work is maintained. It is necessary for matriculation that the student should have had some practical work in the forest and the course he takes depends upon whether he is to be employed in a responsible administrative capacity or as a subordinate in carrying out the forest policy. During the summer months the students make trips of inspection to forestry operations where the work is inspected and the results of the various methods are compared. Some of the graduates are employed by private owners and operators and others by the government in laying out and carrying out the forestry policy for which Sweden has become noted.

An interesting development of this study of forestry is forest book-keeping by which an account is kept that is said to be accurate within about 10 per cent. On the debit side is the estimated growth which is calculated from careful measurements and on the credit side the actual amount of wood taken out. In this way an operator can tell how much he is over-cutting in periods of high prices when it may be permissible to over-cut slightly, just as one may safely carry a slight overload on a motor at times, while in periods of dull business in the lumber trades the forest is given a chance to recuperate. A curve properly drawn will show at a glance whether the tendency is for an increase or decrease in the actual stand and the control of the cutting operation is therefore on a scientific basis.

Reference has already been made at several times in this magazine of the policy of Sweden to require replanting of forest areas. This gives absolute assurance that the country will be able to maintain indefinitely its present rate of production of products based on the forest. It is a sort of sinking fund.

An interesting development is what is known as the Measurement Associations which are organizations of the operators on the rivers for the co-operative driving of the cut and also to check the measurement and correct any errors.

Mr. Graeslund expressed himself as being impressed with the wonderful opportunity that lies before Canada in the development of industries dependent upon the forest but like everyone else who has seen the irreplaceable damage done the forest by improper cutting and the benefits of scientific control and reforestation methods, he would urge that Canadians adopt a more enlightened policy.

### SAVING TIMBER AT THE STUMP.

When Father Noah and his husky sons chopped down the trees from which to build the ancient Ark, they undoubtedly employed the "under cut" method in hewing, ran the risk of being injured by the "kick back" of the falling timber as it left the stump, and also very likely spoiled many feet of good lumber by reason of the "splinter draw" that ripped up the log.

Even before Noah's days, back to the time that the memory and records of man runneth not, and up to the present age of modernity, sawyers and lumberjacks have used the same old "under-cut" method, honored by antiquity in chopping down trees, entailing the same menace to life and limb and the same wastage of valuable lumber.

But, indeed, there is "something new under the sun." And this new thing is a method of felling trees, known as the "V-bed," that effects a great saving in lumber, makes the "kick-back" practically impossible and prevents the "splinter draw," and permits the tree-choppers to cut considerably more lumber in a day than by the old method.

This new "V-bed" method described by "Common Sense," has been evolved after careful study, exercise of ingenuity and patient experimentation by the Southern Pine Association, which is advocating its wide use by lumber producers all over the United States, as well as among its own subscribers in the South, seeking to give all branches of the forestry industry in the country the benefit of the discovery.

An idea of the importance of this new method is given in the fact that experts of the Southern Pine Association have estimated that if the "V-bed" method were applied to every tree now cut in the United States the saving in lumber would amount to the total annual products of several sawmills.

Twenty-five per cent of the time lost due to accidents in the logging operations of Southern Pine mills last year resulted from the fall of trees, logs, etc. A large proportion of this was directly traceable to the "kick back" of falling trees. By eliminating this cause, the "V-bed" will produce a further saving in dollars and cents, but what is still more important, it will result in an inestimable saving of life and limb.

Possibly some unkind things have been said and written in recent years concerning the lumber industry, but regardless of any criticisms, it is a fact that in late years the producers of lumber and timber have exerted earnest efforts and expended large sums of money in the endeavor to conserve lumber, prevent and utilize waste and reduce to a minimum the hazardous risks of workers in the industry. In evolving the "V-bed" method of felling trees the object sought was the absolute prevention of the "kick back" accident, but according to the opinion of experienced lumbermen the other aims mentioned above have also been realized. Safety and efficiency go hand in hand. It has been proven in many lines of industrial life that as soon as safe methods and practices are adopted in any operation, the interest of the employees and the efficiency of the operation is sure to be increased.

Under the old method of cutting down trees a deep "undercut" was made in the tree on the side on which it was to fall. The tree was then sawed through from the opposite side to the base of the undercut. If the falling tree fell into other timber or met with an obstruction, it was sure to "kick back" over the stump and often injured one of the sawyers. Furthermore, instead of the log breaking clean at the stump there would

be a "splinter draw," ripping up the log from four to eight feet from the butt and damaging that much good timber. The "undercut," 12 inches or more in length, was made in the lower end of the log, just above the stump, which caused a wastage of the undercut portion of the log when it was sawed up in the mill as lumber. Under the old method, only one of the two sawyers could hew out the undercut at a time, the other member of the crew standing by doing nothing, while his partner was chopping.

Using the "V-bed" method, a deep V-shaped wedge, six to eight inches long, is cut in the stump portion of the tree on one side. By providing each sawyer with an ax the two members of the crew can chop the notch on either side of the V at the same time, thus performing that part of the work in half the time required by the old method. The saw is then started from the opposite side of the tree so that it will cut through and meet the upper points of the V.

The falling tree will break clean and pull no splinters from the butt, as the entire circumference of the tree has been cut or sawed, and the only possible breaking point is at the heart of the tree. The V-wedge remaining on the end of the log not only prevents the tree from "kicking back" over the stump in falling, but in fact actually causes it to jump away from the stump a distance of several feet.

Thus, by using the "V-bed" method, there is conservation of lumber in preventing damage by "splinter draw" and also in the fact that the wedge is cut out of the stump, instead of out of the butt of the log and the entire log can thus be sawed into good lumber.

There is economy in the time required for the chopping since both sawyers can hew simultaneously and as many of these are paid according to the number of feet of timber they cut per day, the workers can make more money while increasing their employers' production.

Discovery of this new "V-bed" method of felling trees was made by employes of the Edward Hines Yellow Pine Trustees at Lumberton, Miss., following formation of workmen's safety committees which resulted from the efforts of the safety department of the Southern Pine Association, of which department W. Graham Cole is the director. The workmen's committees conducted experiments looking toward use of methods that would eliminate danger in felling timber and the new "V-bed" was evolved and proven successful.

### REDUCES OPERATING TIME.

The pulp and extract department of the Champion Fibre Company, Canton, N. C., said to be the largest paper mill in the South of the United States, has reduced operations to four days a week.

### WOULD TRADE PULPWOOD FOR PORK.

The plight of the fisherfolk along the shores of White Bay, on the isolated north coast of Newfoundland, who are said to be in danger of starving this winter because of the poor fisheries, has attracted the attention of the colonial government.

John Scannell, assemblyman for the St. Barbe district, announced today, that as a relief measure the government was willing to relax temporarily the colonial statute forbidding the export of pulpwood.

This would enable the White Bay people to obtain some revenue from the extensive forests in that region and to buy food in the more thickly settled districts of the colony.



## NEW FORESTS FOR NOVA SCOTIA'S BARRENS

By FREEMAN TUPPER, Acting Woods Manager,  
Maeleod Pulp and Paper Company.

In looking over the forestry maps of Nova Scotia one cannot help but be impressed, and, if a lover of the forest, saddened, at the large percentage of the color representing barrens. Still more will one be impressed, and saddened if he should traverse these barrens, and see the vast extent of waste, multitudes of valueless bushes, and huge pine stubs reminding us of the untold wealth which should have enriched our people. "Our Heritage" swept away in a moment!

The passing of this heritage was keenly felt by the older generation who remember the "forest primeval". Its far reaching effects pass on to the present generation, who, having a better perspective, are beginning to realize what the appalling loss really means. It is true we have some timber in sight which is being depleted by loss from windfalls and lumbering operations, and fires are still a common occurrence. Therefore, if the present generation do not endeavor to guard what we already have, the future generation will drink the bitter dregs, and the loss will be nation wide.

Many of our barrens have been visited by prospectors, seeking a hidden wealth, but they only succeeded in a small degree. Farming is out of the question, so it is evident that the only way left for these lands to serve the public welfare is as forests.

Considering the barrens of Queens County, particularly those along the watershed of the Liverpool river and head-waters, to be a fair average of barrens throughout the province, there are a few facts regarding them which should be brought to the public attention.

Some six or seven years ago, while conducting certain surveys, I had occasion to visit many sections of barrens in Queens County. They were indeed a treeless waste, but are varied in nature owing to repeated fires over portions, so that the original burned areas can now be divided into three distinct classes:

Class 1.—Open Barrens, devoid of trees or stubs, and in some places with sufficient soil to cover the rocks.

Class 2.—Portions of barrens covered with myriads of burned trees and windfalls.

Class 3.—Portions of barrens not burned since original fire, now covered by forest of young hardwood.

During the fall of 1919 and spring of 1920, I renewed the surveys mentioned above. We were amazed and delighted to see the change nature had wrought in a few years. Spruce, red and white pine were growing by the thousands over sections of classes 1 and 2. Even on portions of Class 1, where the soil had been burned, exposing rocks and boulders, where modern forestry would perhaps hesitate to replant, were also red and white pine from ten feet down, all growing in a perfectly healthy condition.

What Nature is doing on these barrens of Queens County at the present time, and on many other portions of barrens in the Province where my interest in the matter led me to visit, is exactly in line with the policy of Government a vast sum of money in replanting. It means that our heritage is returning; a new forest is born to enrich our country in a future time.

There are still large portions of barrens not seeded as yet, but if these conditions exist on average barrens

today, is it not reasonable to believe that other portions will re-seed as years go by?

It would be a crying shame for another fire to destroy this grand contribution, which Nature is again giving to us, and I hasten to make an appeal in behalf of these young trees for protection—for a Provincial Forester to direct affairs and intelligent Rangers to trail careless sportsmen, who do not realize the possibilities of fire.

Forest conditions effect everybody, and to avoid a forest famine in the future, we must act now. The Government must act now. The Government must spend some money on them, and every business man in the Dominion of Canada should be a member of the Canadian Forestry Association. Once their shoulders get behind the wheel of forest protection, give it a push and keep it going!

## WILL USE A LOT OF PAPER.

Joseph Meadon, recently elected President of the Direct Mail Advertising Association at its Third Annual Convention held in Detroit, Michigan, might well be called a son of the British Isles.

He was born in Belfast, Ireland, of an English father and Scotch mother. Shortly after his birth, the family moved from Ireland to France and a good part of Joe's boyhood was spent in the land of Lafayette.

Twenty years have now passed since his arrival in this country, at the age of 23. In that time he has produced personally several million dollars worth of direct advertising,—planned it,—created it and supervised its execution. "Some of it," he says, "was very successful and other parts of it well—taught me quite a lot of things that I did not know before."

While with the Republican Publishing Company, Mr. Meadon founded the Graphic Arts and Crafts Year Book and edited it for four years. This brought him many felicitations from all over the world that kept him very busy arranging for the translation of letters and articles in publications that referred to his work.

When asked about his work and his views on the future of direct advertising, Mr. Meadon said, "I expect that we will produce a million dollars worth of printed advertising during 1921, and seventy-five per cent of it I anticipate will be Direct-by-Mail material."

"I have taken a practical interest, and worked with National advertising, and have a high regard for out-of-door advertising and have counselled and suggested the use of all forms of advertising when helping to formulate the policies of business, believing that there is a community of interest and that one form of publicity supported by other forms makes an effective tool with which to develop merchandising programs.

"I am convinced, however, that Direct Advertising is only just beginning to get a toe-hold. Its value has not been appreciated until the last few years except by a handful of specialists. There is not a business that cannot be materially benefited by it at least cost than by most other mediums. The Direct Mail advertising Association is the organization that will help to cut out the pitfalls of direct merchandizing and put it on a sound basis and assist its members to benefit by the experience of others.

The wine-palm of western Africa yields a delicious sap which, mild when first drawn, begins to ferment in a very few moments after it is exposed to the air.

## IS COLLECTING OF WASTE MATERIAL TO STOP?

(Editorial in the "Daily Mill Stock Reporter.")

Mixed rags are today selling in good sized quantities at as low as a cent and a half per pound, and mixed paper in carload lots has changed hands at 35 cents per hundred pounds. Less than two months ago five cents a pound was none too high a price for a good packed paper sold at better than \$2.00 per hundred pounds.

The importance of this is not to be glimpsed from a comparison of the figures alone, striking as the fall in prices has been. Nor is it to be got from a comparison with pre-war levels, than which present levels are still a bit higher. Rather, the significance of present prices is that rag and paper stock, as also other waste material markets are faced with a danger that threatens the very foundations of the business—the collection of waste material is threatened at the source. At present prices, it cannot be expected that collections of waste materials can go on. It is economically impossible, certainly as regards rags and waste paper. Prices on rags will have to go up, or the collections which have been steadily dwindling will stop completely. At present prices, the country collector cannot exist. The only conditions on which collections can be continued is for the cost of living to go back completely to pre-war levels, which is at present not considered likely, or for the cost of collection to go back to 1914 levels, which is also hardly likely, or for cheaper labor to become available, which from present indications is not expected.

Let us consider a little the mathematics of the situation:

In 1914, a country collector earned, and could get along on, \$2.00 a day. Today he needs \$6.00 to \$8.00 a day. In 1914, the cost and maintenance of a horse and wagon was \$1.50 a day; to-day, a day's use of this essential collection machinery is \$5.00 a day. This is an increase in cost of anywhere from \$2.00 to \$3.00. In October, 1914, mixed rags sold at 1.40 to 1.50¢ a pound, and today's price is only 1.50¢. This does not take in the increase in shipping costs. It now costs the rag collector from 50 to 75 per cent more to ship his rags or other waste material to a grading center. It is absolutely a losing proposition for the rag collector to continue to operate. He can't do it if he wanted to.

At a cost of \$13.00 a day for his collecting machinery and for his own necessary expenses, he would have to collect close to a ton of rags, or its equivalent a day. How many country dealers can do it? How many can collect as much as an equivalent of 500 pounds of mixed rags? At present prices, if he collected a half ton he could obtain \$15.00. The freight rate for this half ton, if he had to ship no more than about 100 miles, would mean a cut of \$2.00, and on an average haul would surely net \$3.00 and as high as \$5.00, and where is the cost of packing, baling, carting and loading? From reports we have received throughout the country, even such scrap as iron and steel and metals, have been less and less collected.

The worst part of the present situation is that waste materials are not like other commodities. They must be gathered, or be burnt or destroyed in some other way. The metal producer can keep the ore in the ground unburned, the farmer can change his crop; the manufacturer can cut production, without causing any waste of economic goods. Waste materials, on the other hand, can't be stopped in production, and

it is an economic crime to have such raw material destroyed.

What's the answer? It seems to be that if mills are to get their necessary raw material when they begin operating more actively—and it is to be noted that paper manufacturers in convention at Chicago last week still talked paper shortage and the necessity of saving scrap—they will have to pay higher prices than the present price lists indicate. The cost of labor has not gone back to pre-war levels; the cost of living is falling but will not get back that far; the cost of transportation will not be reduced unless the carriers' efficiency is to suffer. There is only one possibility that might prevent prices on waste collected by the man with the wagon from going up, and that is for much cheaper labor to be thrown on the market through increased immigration or wholesale discharging of labor at the country's plants, and the latter possibility is hardly likely as the present slackening in industry is everywhere considered to be at about its peak.

## WILL USE HARDWOOD FOR GROUNDWOOD PULP.

Under the supervision of the Laurentide Forestry Department, about one thousand cords of hardwood are being cut in the vicinity of the Manigacee Rapid, about twenty miles north of Grand'Mère, which will later be brought to the mill for the manufacture of groundwood. Experiments carried on for the past two years show that hardwood can be used for groundwood in place of spruce and balsam, up to a certain percentage, and this year the experiment will be carried on with a much greater quantity of hardwood.

The hardwood that is being cut is yellow and white birch, maple and poplar. The yellow birch and the maple will be brought down the river in barges, and the white birch and poplar will be boomed down. If costs of cutting and bringing this hardwood to the mill prove to be satisfactory and the wood itself is found to be useful in the manufacture of paper to supplant to some extent the use of spruce and balsam, there are thousands of cords of this wood at easy distance from the mill that can be used advantageously.

According to Ellwood Wilson, head of the Forestry Department, the cutting of this hardwood is a great aid to the natural reforestation of the woods by the soft woods, which grow somewhat slower than the hardwoods and which, unless the hardwood is cut out, fail in the competition for growth.

## ANOTHER PULP MILL FOR B.C.

The erection of a pulp mill at Stave Falls, where there is said to be a billion and a half feet of suitable wood for the industry, is projected. There is unlimited electrical power close at hand, easy access to the timber limits by way of the Stave River and the lake, and connection with the Canadian Pacific Railway by way of the standard gauge road of the Western Canada Power Company. These and other things are said to be attracting the attention of foreign and eastern capital leading towards the construction of a pulp and paper mill. Extensive logging operations are being carried on by Abernethy and Lougheed, several camps being in operation up the lake, the logs being towed down the river to Stave Falls, where they are loaded on cars and transported to Ruskin, there to be dumped into the Fraser and make up into booms.

## British Trade News

(From our London Correspondent).

London, Nov. 8, 1920.—Death has removed one of the oldest and most respected of British papermakers, Mr. Alexander Mackie, of Messrs. Robert Craig and Sons, Ltd., in his 76th year. For the past 60 years Mr. Mackie has been in many ways making paper in Scotland and his name is being carried on in the industry by his son, Peter R. Mackie, the manager of the Hunslet Paper Mill at Leeds. Mr. Alexander Mackie was 40 years with Messrs. Craig and by his death the firm loses a valuable servant.

### Coal Strike Over.

The coal strike is over. Through the medium of the Government the mine owners and the coal miners have arrived at an agreement; but it will be fully another month or six weeks before supplies of coal will be delivered in any quantity. The ban on exporting coal still exists and so does the Order cutting down supplies by 50 per cent to all mills, except the exempted. As a matter of fact these Orders will remain in force until the coal industry gets back to itself again, so that the paper mills have no chance as yet of getting back to full-time working. Some of the mills still run on short-time while others are closing down temporarily. Messrs. John Allen & Sons, of the Ivybridge Paper Mill, in Devonshire, announce that owing to the serious dislocation of trade generally and the difficulty of obtaining chemicals, coal, etc., their paper mill has had to be closed down until further notice. Throughout the coal strike the paper industry has not suffered so much as other industries. This was attributable to the foresight of millowners who laid in good stocks of fuel and then "cut their cloth according to their measurements"—in other words they struggled along as best they could to try and keep the wolf from the door. In this coal strike it was very fortunate the railroad men did not join the miners; if they had the results would have been untold. But as things are the miners have disorganised the pulp and paper industry and it will be some time before a normal state is reached.

### Ambition For Pulp Mills.

There is a good deal of talk and discussion going on in London about paper mill owners being anxious to own a pulp mill so as to have supplies of the raw material direct. I do know of some people who are negotiating, but the results are at present unknown. I hope before any investment is made the motto "Trade within the Empire" will not be overlooked and in this respect the claims of Canada come in. Lord Burnham, Lord Riddell, Mr. Stanley Cousins and others have already advanced the claims of the Dominion. There are a few at present looking round Scandinavia to see if a deal can be made. It is not the first time Britishers have become owners of pulp mills in Scandinavia where they had advantages and disadvantages. But the feeling is that Canada wants British money and no effort should be spared to invest it there. Canadians who have visits from British paper makers will do well to let nothing go astray in pushing forward Canadian pulp and plupwood limits.

### German Paper Mills.

Information has reached London that the German paper mills are showing more activity of late. This is attributable to the domestic shortage of newsprint and

the influx of foreign orders for printing papers of all kinds, notably colored. It is quite evident the Germans are making every effort to speed up their output of newsprint, as they see in all the markets of the world a very ready and generous demand for it. At present they produce about 1,000 tons a day compared with 2,000 in pre-war days and big shipments at intervals are dumped on the markets.

### The Pulp Market.

Business in the British pulp market is dull and featureless. Prices, however, are unaltered. The state of the market is due to three causes, (1) A quiet demand for paper; (2) The upheaval caused by the miners strike; (3) Papermakers have good supplies of raw materials in stock. Inquiries are being made for ground wood on a small scale and some small deals have been effected. Of the chemical pulps only small parcels are changing hands. As a rule, November usually creates a little stir in the pulp market, but the present small demand for paper is upsetting pulp men and their hopes of a revival in market conditions.

### State of the Paper Trade.

In previous notes I gave short reviews of conditions prevailing in the British mills. The great majority of the mills had fair supplies of coal in stock; but the adoption of short-time working reduced output and this, no doubt, has been counteracted by a poor demand for paper in the domestic market, so that greater attention is being concentrated on export account. Indeed, it may safely be stated that in the United Kingdom, at the present time there is depression in the paper industry, which has been accelerated by the coal strike. It is regrettable, certainly, as it reflects all round in the pulp and employment figures, while millowners are at their wits end on the turn of events and the increasing cost of production. The newsprint mills are going on steadily and the price is not reduced.

### Montreal Man Head of "The Times."

No doubt Canada has received the news by now that Sir Campbell Stuart has been appointed the managing-director of "The Times" in London. This is a very big honor for a Canadian. He is now Lord Northcliffe's right-hand man and the position is one of great responsibility. Sir Campbell Stuart is very popular and no doubt we will hear his name mentioned a little more in pulp circles. He has been for sometime a director of the Anglo-Newfoundland Development Company.

### New Crepe Mills.

I am informed that Messrs. D. Freeder & Co., are now in their new crepe paper mill situated at Lea Bridge Road, Leyton, London. A new mill has been erected and the firm will give attention to the production of corrugated paper in rolls, in addition to the varied selections of crepe paper they are notable for.

### Notelets.

Mr. W. Raitt, the cellulose expert to the Indian Government, whose contributions have appeared from time to time in the "Pulp and Paper Magazine" on Bamboo pulp, is bringing his sojourn in England to a close this week. He has been giving paper-making and machinery very strict attention during his visit to England and Scotland, and new developments are expected on his return to India.

Good shipments of ground wood are arriving in England from Canada.

The wood pulp contract note is at present a topic of discussion between pulp and paper men. It has always been a bone of contention.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**E-4. The future of acid-making.** H. O. L. Berger. Paper, 10-3, 23, (June 30, 1920). A description of the various acid-making systems used, showing progress made, the probability of future decrease in the use of milk of lime systems, and the advantages of the Jeussen tower system. Future progress will probably be along the line of using liquid  $\text{SO}_2$  instead of burning S, and of preheating the cooking acid to the cooking temp. before charging into the digester.—A. P.-C.

**E-4; P-1. Gas masks for sulphur dioxide.** Paper, 22, (June 30, 1920). A gas mask has been devised at the U. S. Forest Products Lab., Madison, Wis., for protection against  $\text{SO}_2$ . According to the U. S. Bureau of Mines this type of mask holds up about 15 mins. against a concn. of 5 p.c. of  $\text{SO}_2$ . Air becomes unbreathable when it contains about 150 parts per million of  $\text{SO}_2$ . The masks can also be used in the bleach room when necessary.—A. P.-C.

**F-2. Utilization of spent liquors from straw and wood pulp manufacture.** M. Muller, Wochenbl. Papierfab., 50, 2749-50 (1919); Chem. Zentr., 91, 151, (1920); J. Soc. Chem. Ind., 39, 330A, (1920). Steam is admitted to the digester freshly charged with wood in order to create a vacuum. The whole of the hot, black, spent liquor from a previous digestion is then pumped onto the prepared charge, after which the spent liquor is quickly forced out again by steam free from air. In this way the most important feature of Ungerer's process is utilized. At the end of the digestion, in the manuf. of pulp for bleaching,  $\text{CO}_2$  and atmospheric O must, as far as possible, be excluded from the digested pulp, for which reason blowing out the charge is preferable to extracting by Shank's process. The freshly blown-out pulp should be treated with hot fresh caustic liquor, which is drained off and used for digesting fresh wood. The destructive action of the liquor may be avoided by using the process described in Ger. patent No. 244,681 (J. Soc. Chem. Ind., 34, 1048, (1915)).—A. P.-C.

**K-12. Advantages of electric tachometer in paper mills.** Carl O. Kunde. Paper, 17, (July 7, 1920). The D. C. tachometer in its simplest form consists of a magneto-generator (permanent magnet machine) calibrated and connected through a twin-conductor cable to a D. C. indicator or recorder of the d'Arsonval voltmeter type. The generator is suitably driven from a revolving member of the paper machine, calendar, etc. Its advantages in the paper mill are briefly discussed.—A. P.-C.

**K-12. Comparison of drying systems.** Arthur G. Maurey. Paper, 19, (June 30, 1920). Results of comparative tests made with the siphon system and the Dodge gravity evaporator system of removing condensed steam from driers, showing the advantages of the latter as regards steam press, steam consumption, speed of machine, and output of paper.—A. P.-C.

**K-0; R-2 Oldest watermarks of Papal States and nearby provinces.** Ashford White. Paper, 15-7, (June 30, 1920). Translation of a partial review by Friedrich von Hossle in Papierfab. of U. M. Briquet's work on the history of watermarks, giving a brief historical outline of the origin of watermarks with a description

of the early guilds and methods used in the first stages of European paper manufacturing.—A. P.-C.

**K-0 Tables and formulas for converting pound-weight into metric weight.** Paper, 34, (June 30, 1920). Handy tables and formulas for use in making export shipments and invoices, figured for both board and paper.—A. P.-C.

**K-0. Density table for paper stock.** Paper, 14, (July 7, 1920). Table giving lbs. of dry stock per cu. ft. of liquid, no. of cu. ft. containing 1 lb. of stock, lbs. of dry stock, in 1 gal. of liquid, no. of gals. containing 1 lb. of dry stock, cu. ft. of liquid per min. per t. of dry stock per 24 hrs. gals. of liquid per min. per t. of dry stock per 24 hrs. lbs. of water per lb. of stock gals. of water per lb. of stock, gals. of water per ton of stock, corresponding to consistencies from 0.10 to 6.00. (See Pulp and Paper, 18, 854 (Aug. 12, 1920)).—A. P.-C.

**L-4. Milk containers.** J. Soc. Chem. Ind., 39, 131R, (1920). Efforts are being made to produce a milk container from waste paper and wood pulp. A new process which blows the pulp on the form and then dries it by blowing through air heated to 600 deg. F. is stated to produce a good container at a manufacturing cost lower than that of collecting and washing glass bottles. There are still some problems to be solved in connection with proofing the container with material that will resist oils, fats, and water without imparting a disagreeable flavor and being at the same time cheap and easy to apply.—A. P.-C.

**L-5. Cellulose acetate and its industrial uses.** Maurice Desehens, Chimie et Industrie, 3, 591-607, (May 1920). A detailed description of the properties, methods of manufacturing and industrial uses of the acetates of cellulose.—A. P.-C.

**L-7. Tensile strength of fibers and yarns, especially artificial silk and staple-fiber.** P. Kraiss, Neue Fasertstoffe, 1, 266-8, (1919); Chem. Zentr., 91, 208, (1920); J. Soc. Chem. Ind., 39, 329A, (1920). (See also J. Soc. Chem. Ind., 38, 895A, 1919). Staple-fiber yarns from viscose or cuprammonium silks show a loss of tensile strength on damping with water, also with spinning emulsions, but petroleum, amyl acetate, and phthalic acid esters impart a distinct increase in strength. Heating for a short time increases the strength in the dry condition but the strength in the wet condition is not improved. As regards chemical after-treatments, dyeing with chrome yellow has a favorable effect on viscose yarns, and cuprammonium yarns are improved both by chrome yellow and by treatment with tannin-gelatin. Chemical after-treatments may also mitigate the tendering of artificial silks on damping.—A. P.-C.

**L-7. Artificial silk manufacture.** J. Soc. Chem. Ind., 39, 132R, (1920). The world's production of artificial silk rose from 2,000 metric t. in 1902 to 5,000 t. in 1906 and 8,000 t. in 1914. The production of Germany is estimated at 5 t. daily, and that of France, as soon as certain new installations are completed, will show a capacity of 4 t. a day. At Lyons a product known as silk cellulose is being produced by an entirely new process (U. S. Patent No. 1, 184,820). It has a brilliancy comparable with that of Schappe silk, and its properties are closer to those of natural silk than any stated the structure of the wood fiber is preserved,

particularly suitable for the manufacture of velvets. It is considerably finer than ordinary artificial silk, and is of the older artificial silks. It can be spun into threads and the regular geometric form of the elements contributes greatly to the strength and durability of the fabric.—A. P.-C.

**M-9. Motor trucks in a paper mill.** D. M. le Bourdais. Paper, 21-3 (July 7, 1920). A description of the success obtained in the use of motor trucks by the E. B. Eddy Co., who were the first to use motor trucks in the paper industry.—A. P.-C.

### VOCATIONAL EDUCATION AT THE CHAMPION FIBRE MILLS.

Mr. J. C. Wright, who is chief of the Industrial Education Service of the Federal Board for vocational education recently visited the evening schools at Canton, N.C., where, through the co-operation of the Champion Fibre Company and the State Board for Vocational Education, evening classes are being conducted for the instruction of the mill employees.

Mr. Wright's report of the work he found in progress at Canton is as follows:

"The Champion Fibre Company operates three mills in Canton. They include sulphite, sulphate, and soda processes, as well as a plant for the manufacture of tannic acid. Their working force includes from 1200 to 1500 employees. A new paper mill is being erected which, in the near future, will materially increase the number of employees.

The management has become greatly interested in giving the employees of the different plants an opportunity to extend their technical training in the processes involved in the manufacture of pulp and paper. Under the direction of the State Board for Vocational Education an organization has been set up for evening classes. This organization includes a local director in charge and fifteen teachers, all chosen from the mills and most of whom are superintendents of various departments. In order that the organization may more effectively meet the needs of those attending the classes, as well as the industry, an educational committee of five members has been appointed to study the various problems involved in making a more efficient organization.

The classes as a rule meet two evenings per week at 7 p.m., although some of the classes are held at 3.15 p.m.

The following courses are included:

Chemistry of Pulp and Paper Making. Practical Electricity. Shop Practice. General Pipe-fitting. Masonry. Steam Plant Practice. Blueprint Reading and Elementary Drawing. General Mill-wrighting. Pulp Making. Manufacture of Tannic Acid. Paper Manufacture.

All the instruction given in the classes which I visited was related to the daily employment of the group. In conference with the instructors and the educational committee it was decided that as soon as the textbooks being compiled by the Joint Executive Committee of the Vocational Education Committees of the Pulp and Paper Industry are available it will be desirable to reorganize these courses and divide them into a greater number of short units — units which will correspond to those set up in the above mentioned texts. It was the consensus of opinion of those present in the conference that the arrangements made by the above committee for making available the texts in small pamphlets on unit subjects will aid in facili-

tating the instruction in these classes, especially since it will be possible to place in the hands of the men themselves a textbook on the subject to be studied.

About 150 employees are enrolled in the several classes. The Company expects not only to utilize these classes for the purpose of improving the technical efficiency of its employees but also to use them as a means of providing a corps of trained workers to manage the new plant being erected, which will not be ready for operation before another year.

The classes are held in classrooms set part in the Y.M.C.A. Building, which is adjacent to the manufacturing plants, and also in the technical laboratories of the plant itself.

The subject of foreman training is being considered, but no classes have been formed up to the present time. I believe that a conference on foreman training ought to be held in this vicinity, to which representatives of industries of this kind should be asked to attend. Many of our industries similar to the pulp and paper industry employ large groups of relatively unskilled labor. In such an organization the foreman is the key man and has all the responsibility for technical training in its relation to production.

The salaries of the teachers are paid from local funds but reimbursements are made by the State Board for Vocational Education from State and Federal funds."

### WHAT THE TECHNICAL ASSOCIATION IS DOING

A meeting of the Committee on Heat, Light, and Power of Tappi was held at Dayton, Ohio, on Monday, November 15, when plans were made for the annual report which is likely to attract unusual attention from mills in membership. One of the principal subjects of discussion in this report will be the use of pulverized coal as fuel. The scope of the Heat, Light, and Power Committee is a broad one, and it is intended to bring up for discussion at the forthcoming annual meeting other subjects of general interest to the technical and operating departments of pulp and paper mills, such as the electrification of machinery, heating and ventilation of buildings, especially machine rooms, steam turbines versus reciprocating engines, etc. All of these subjects have a bearing on increased production and efficiency, and the sessions of the committee at the annual meeting next April should be well attended. The chairman of this committee is Howard S. Taylor, of the Management, Engineering and Development Company, Dayton, Ohio.

William A. Munro, Groundwood Superintendent, Wisconsin Pulp & Paper Co., Stevens Point, Wis. has accepted the appointment as chairman of the Groundwood Pulp Committee of Tappi, and is now naming his associates.

The third series of **Technical Association Papers**, which will contain the papers and discussions at the Fall Meeting in Saratoga Springs, N. Y., together with special articles, reports, and translations, is now in the hands of the printer, and will be issued at an early date. As an appendix to this volume will be printed the Year Book and directory of members. No more copies of **Technical Association Papers, Series II** can be supplied, the edition having been exhausted. Members of Tappi are entitled to one copy of **Technical Association Papers, Series III** when issued. Extra copies for members and the public will cost \$2.00 each.

# UNITED STATES NOTES

Charles R. Long, president of the Pennsylvania Dailies Association, has issued a call for a conference of newspaper publishers at Harrisberg for this week in connection with a meeting of the executive committee of the Dailies Association. Reconstruction problems confronting publishers will be discussed.

Ten thousand members of the Paper and Rag Sorters Local No. 16,446, affiliated with the American Federation of Labor, went on strike in New York City last week. The men claim that their employers had reduced their wages twenty per cent. They maintain that they have been getting the poorest possible living wage and that they could not consider working for less than the scale that has obtained heretofore. The average wage has been \$35, with a maximum of \$38 for chauffeurs and a minimum of \$23 for an apprentice. Rag sorters and "box stall" men get \$35 each.

According to W. J. Eisner, president of the Newark Paraffine and Parchment Paper Company, the practice of using waxed paper as a wrapper or container for food products is becoming more widespread throughout the country. As one of the leading manufacturers of waxed paper in the United States, Mr. Eisner's concern is being kept running at full capacity supplying this product. In many states, says Mr. Eisner, it is compulsory to wrap all foodstuffs either for display or delivery in waxed paper, and in those states where it is not mandatory, the manifest benefits to be derived from such usage are making this style of wrapper steadily more popular.

Speaking last week at the dinner of the Maine Society in New York, Frederick H. Parkhurst, Governor-elect of Maine, predicted that the Pine Tree State would be placed far ahead of its present position through the projected development of its hydro-electric power. Governor Parkhurst said that within a short time, because of the dwindling of the coal supply, Maine would come out of the mild industrial slump that began about 1840, and if its waterways were fully exploited would develop power to turn an eighth of the wheels of industry in the United States. At the present time Maine stands third among the States in developed water power, declared the Governor.

According to an announcement made from Albany last week, George B. Pratt, New York State Conservation Commissioner, has drawn up a reforestation scheme which is to be submitted in the form of a bill to the next session of the Legislature. The seriousness of the forest situation in New York State was revealed recently through an investigation by the conservation commission and a commission selected from the United States Forest Service. The plan which Commissioner Pratt will propose involves an extension to the State at large of the system of forest protection and development now practiced in the Adirondaeks and Catskills. It will call for the formation of ten forest districts in the State, with a district forester in each. Particular attention is to be given to the prevention of forest fires.

Contracts for the erection of a new concrete and steel box plant at New Orleans have just been let by the Union Paper Products Company. \$300,000 will be required to complete this factory in which it is intended to produce corrugated paper-fibre boxes. Seventy-two people will be employed at the start without counting the office force.

Philip M. Judd of the Judd Paper Company resigned from the presidency of the Holyoke Chamber of Commerce. He has been succeeded by B. E. Hutchinson, treasurer of the American Writing Paper Company. Being selected for this place comes as a signal honor for Mr. Hutchinson inasmuch as he has been a resident of Holyoke for only a short time. Mr. Hutchinson, however, has given freely of his time in civic improvement activities and the townspeople quickly came to know him because of his many voluntary and public spirited services.

A call for a meeting to be held December 2nd at Utica, N. Y., has been sent out by the Empire State Forest Products Association. This will be the association's fifteenth annual meeting. Besides electing officers and disposing of the usual routine matters the business of the gathering will relate mainly to the formulation of a definite policy of forestry for New York State.

Walter A. Poos has been put in charge of a branch office opened in Kalamazoo, Mich., by the Whitaker Paper Company, Cincinnati.

The Eddy Paper Company, the big Kalamazoo paper making concern, expects to have its new mill at Three Rivers, Mich., in complete working order before the winter sets in. The first machine has already been installed and is now in operation. An exact duplicate of this machine—320 x 80 feet—has been completed and will be put in place early next month. The new storage plant connected with this mill is the largest structure of its kind in the Middle West. A special effort is being made to get the stock house enclosed before severe weather comes along, as with two machines in operation great supplies of raw material must be housed to secure an unbroken production of the finished container board, the chief product of the new mill.

Directors of the United Paperboard Company have declared a dividend of 2 per cent. in cash and 10 per cent. in stock on its common, payable on January 10 to stock of record on December 15. It was announced that \$1,000,000 of its preferred stock had been retired in accordance with the plan announced several months ago.

The National Paper Products Company, Carthage, N. Y., recently announced the resignation of H. L. Samson, for the past six years general manager of its Eastern division. Mr. Samson, who is to continue to serve the company in an advisory capacity, will be succeeded in the Carthage division by E. B. Eddy, now general superintendent of the Eastern department.

# PULP AND PAPER NEWS

The Ontario Government has disposed of another fifty square miles of timber limits by tender. This is situated in the vicinity of the station of Jellicoe, on the Canadian National Railway, east of the Nipigon Reserve. J. T. Horne, of Fort William, was the successful tenderer, securing the limits at \$6.10 a cord for spruce and twenty-one cents for each jack pine tie. A nearby limit was sold a year ago for \$3.46 a cord.

The editorial direction of the "Presbyterian Witness", the new Presbyterian weekly paper, will be under the joint guidance of Dr. C. S. Carson, of Halifax, and Dr. Robert Haddow of Toronto, who were appointed associate editors of the new publication at a meeting of the executive committees of the General and Publication Boards of the Presbyterian Church in Toronto this week. Dr. Carson is expected to arrive in Toronto from Halifax about December 1st and the first issue of the new paper will be that of the first week in December.

Mr. Theo. Feilden, editor-in-chief of the Empire Mail, London, Eng., is at present in Toronto on a mission which has for its object the encouragement of trade development within the Empire. Mr. Feilden is just completing an extensive tour of the whole of Canada in connection with his work, and in preparation of the launching of an exceptionally fine Canadian number of the Empire Mail. He believes that hitherto the Canadian business field has been left too much to American industries, and it is the purpose of his publication to make known throughout the empire the opportunities in trade which exist elsewhere under the British flag.

Mr. W. H. Sherriff, of the Hodge-Sherriff Paper Co. Ltd., sails on November 23rd on the Victorian for England and in the meantime is visiting Ottawa and Montreal. Mr. Sherriff, who has only recently returned from a trip through Western Canada, reports that trade conditions there present the same problems that exist in the east and that a quiet period appears to have set in.

Mr. G. W. Pauline, of Messrs. Ritchie & Ramsay, paper dealers, Toronto, is back again at his desk after four weeks absence due to injuries received in an automobile accident. His many friends were glad to greet him again.

Mr. R. T. Worrel, of the pulp department of the George H. Mead Co., Dayton, Ohio, and Mr. H. S. Taylor, of the Management Engineering and Development Company, of Dayton, were in Toronto during the week.

The Rose Lithographing Corporation of New York has brought suit at Osgoode Hall, Toronto, against W. B. Mitchell, of Toronto for \$5,000. The company says that Lundy Inc., of Buffalo, ordered 500,000 boxes at \$25 a thousand from them by an agreement of May 15, 1918. Lundy, Inc., subsequently went into bankruptcy and suit is now being brought against W. B. Mitchell, who is said to have guaranteed the agreement to recover damages for the order.

Mr. A. L. Dawe, Secretary of the Canadian Pulp & Paper Company, Montreal, was in Toronto this week.

A visitor to Toronto this week was Col. C. H. L. Jones, General Manager of the Spanish River Pulp & Paper Mills, Limited, Sault Ste. Marie.

Mr. W. P. Innes of the Interlake Tissue Mills, Limited, Thorold, left this week to resume his position as Montreal and eastern representative of the company.

Mr. Bion D. Wheeler, representing the New York office of Edwin Butterworth & Co., of Manchester, England, dealers cotton waste, bleached sulphite pulp, etc. called on the trade in Toronto this week.

Mr. E. H. Talbot, editorial writer on the staff of the New York Commercial, is in Toronto. With his wife he is making a 6,000-mile tour of Canada and is preparing a series of articles on Canada and Canadian railways.

Premier Drury has issued a statement in which he replies to certain criticism levelled at the Ontario Government in connection with the activities of the Backus interests in securing pulp limits and water power privileges. The Premier states that when Backus bids on the English River limits he has to take his chance with other bidders, who are guaranteed a sufficient supply of power. One of the conditions of sale is that the Crown will be prepared to negotiate with the successful tenderer to enable him to secure an undeveloped water power to develop for the operation of the mill or mills. Because Mr. Backus already is established in Kenora he may have some advantages over someone who would have to locate there for the first time. "But," says the Premier, "if we had not stipulated for the manufacture of the logs at Kenora, another town, with a temporary life, might have been established in the north and Kenora been destroyed. Incidentally, of course, that involves carrying the logs across the C. N. R. to the C. P. R. which was unavoidable." The Premier also states that the Government is getting twice the dues for the Lake of the Woods limit as those for which the Hearst Government stipulated in 1914, and in addition the Government are requiring Backus, in order to get that limit, and not the English River limit to pay Kenora \$335,000 for the municipal power plant at Kenora, with a power plant that means a loss of hundreds of thousands of dollars, to build a pulp mill of 200 tons capacity and to again operate some closed-down saw mills.

By a recent reorganization of the executive of Messrs. Warwick Bros. & Rutter, wholesale and manufacturing stationers, Toronto, Mr. E. J. Hathaway was promoted to be secretary in succession to the late Charles E. Warwick who occupied the position of secretary-treasurer. Mr. Hathaway has been with the firm for upwards of thirty years having for some years been head of the manufacturing end of the business and the loose leaf specialties. Mr. William Warwick, son of the late Charles E. Warwick, is now the treasurer of the company and Mr. H. C. Woods is the managing director.

In point of production the month of October was the best of the season for the Whalen Pulp and Paper Mills at Swanson Bay. The plant turned out 1,203 tons of high grade pulp. The lumber and shingle mills have also been active and had a good month in spite of the unfavorable market. The shingle mill is running to capacity.

The Orillia Packet has just celebrated its fiftieth anniversary by issuing a special number, in which its own history and that of the town is entertainingly told. For half a century the founder of the paper, Mr. W. M. Hale, has been in charge, and for forty years his brother, the late George Hughes Hale, was associated with him.

A meeting of the directors of the Ontario Pulp and Paper Makers' Safety Association was held in the office of the Interlake Tissue Mills, Ltd., Toronto, this week, with Mr. George Carruthers President, in the chair, and the following other directors present: Col. C. H. L. Jones of Sault Ste. Marie; Mr. H. F. E. Kent of the Kinleith Mill; Mr. C. Nelson Gain of the Don Valley Paper Mills; Mr. L. R. Wilson of the Abitibi mill and Mr. A. P. Costigan, secretary. The whole field of safety endeavor was carefully gone over statistics compiled by the secretary were examined and on the whole a fairly satisfactory state of affairs was shown to exist in respect to accident prevention. Several suggestions were made to further increase accident prevention in the pulp and paper mills with a view to making next year a record as far as the prevention of accidents is concerned.

The Mattagami Pulp and Paper Co., Limited, at Smooth Rock Falls, Ont., is very busy and report shipping large quantities of its sulphite fibre to Great Britain and the United States. The present capacity of the plant is 30,000 tons a year but with additional equipment now completed the yearly output will be at least 45,000 tons. The company will take out 150,000 cords of pulpwood this year. Mr. Duncan Chisholm of Toronto is the President of the company and Col. D. M. Robertson is secretary-treasurer. The company recently completed an operatives' dormitory, dining hall and kitchen building at a cost of \$20,000.

Mr. John Stadler, assistant general manager of the Belgo-Canadian Company, had his Chandler Six pinched in Montreal. The car was recovered, minus all detachable articles of value. It is Nemesis for jilting his jitney?

Mr. Geo. Claxton, chief Designing Engineer for the Belgo-Canadian Co., has returned from a two months trip to England. He seems very pleased with his trip but more pleased yet to be back in old Shawinigan Falls. To some one who asked about how he found the conditions in the Mother country George said: "It changed wonderfully!"

It has been stated in well informed circles in Montreal that the purchase of the timber limits of the Bronson estate at Chelsea on the Gatineau river, a few miles above Ottawa, was for the British interests which are about to establish a large match and box industry in this country. This decision to buy the Bronson limits definitely settles the matter of the location of a plant by Maguire, Patterson & Palmer, Ltd., four of the largest manufacturers in the world. It has been stated that the Laurentide Company has no interests in the limits.

Lord Beaverbrook did not carry out his intention of buying a mill in Canada because of "extreme prices asked for property," according to Mr. Angus McLean.

## PRESIDENT OF WHALEN PULP AND PAPER MILLS LTD., MAKES INSPECTION.

T. W. McGarry, K.C., President of the Whalen Pulp and Paper Mills, Ltd., accompanied by directors of the company made a tour of inspection of the companies' three plants the first part of November. Accompanying President McGarry were Mr. W. D. Ross, director, Mr. James Whalen, director, Mr. Lawrence Killam, director, Mr. Melvill Dollar, President of the Canadian Robert Dollar Co., Mr. Lester W. David, and Mr. A. E. McMaster, secretary-treasurer of the Whalen Company.

Embarking at Vancouver in the beautiful cruiser Aquillo, the property of Mr. H. F. Alexander, President of the Pacific Steamship Co., the party enjoyed a delightful trip. The tour of inspection was of great interest to two or three of the party who had never seen the British Columbia Coast and its great natural resources at first hand. The first call was at Swanson Bay, and from there the party went to Port Hardy and across country to Port Alice as it was thought best not to chance the rough weather at this season of the year in the West Coast of Vancouver Island.

From the Port Alice plant the tour of inspection was concluded by inspecting the plant at Woodfibre on Howe Sound. All plants were operating to full capacity and the visitors had a good chance to see operations to good advantage.

Mr. McGarry left for the East on Nov. 11th but will return to Vancouver about the first of December.

No appointment of General Manager has been made as yet. Mr. A. E. McMaster who is Secretary-Treasurer of the company, and who has done much to strengthen the company's position during the past couple of years is acting General Manager. Upon Mr. McGarry's return the new appointment will without doubt be announced.

The Whalen Pulp and Paper Mills, Ltd., are now occupying larger and more convenient offices in the Bank of Nova Scotia Building at 602 Hastings Street West. They occupy the entire seventh floor of the building.

## WANT TIMBER REGULATIONS CHANGED

A delegation of the Limit Holders' Association and other parties interested in the lumber business, waited Thursday last, on Premier Taschereau, of Quebec. Hon. Mr. Mercier, Minister of Lands and Forests, and Hon. J. E. Ferrault, Minister of Colonization, Mines and Fisheries, and, through Major C. J. Power, M.C., attorney, suggested that in view of the recent increase in duties on the exploitation of wood and paper in the province, as set by the provincial Government last August, changes in the present regulations should be made, if business was to be continued. They submitted a memorandum containing a number of suggestions.

Premier Taschereau and the other ministers stated they would immediately take up the matter.

Pulp and Paper Mill Accessories, Montreal, have taken the selling rights in Canada for the "Niagara" beater, designed and built by the Valley Iron Works, Appleton, Wis. Reports from the Kimberly-Clark Company indicate that the "Niagara" handles stuff the way friend Peterson of the V. I. W. handles business—with a rush. In design, the beater looks somewhat like a cross between the Marx and Schacht beaters. Some rather extraordinary results are claimed.





# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Nov. 20.—The week has seen no accentuation of the dullness that has been felt in the paper trade during the past few weeks. In fact in some lines, the situation, which never has been really bad from a business standpoint, has shown improvement, with more enquiries and more sales. Speaking broadly, however, the trade is going through a quiet period although so far nothing has happened except a slight falling off in demand for paper, at the mills, which seems to have been caused largely through a desire on the part of the printers to hold off buying in the hope of lower prices. This policy has been generally adopted in the printing trade, although there is no doubt that the job offices are undergoing a quiet period. Jobbers too are slightly more cautious in buying but for the most part they have confidence in the future of the trade and are stocking up in the belief that freer buying is going to set in by the first of the year. Output of paper from the mills is still being seriously retarded by low water and power shortage, particularly in the Ottawa district and in the meantime some of the mills have recognized the fact that a somewhat quiet period is at hand, with the result that the jobbers are enjoying the unique experience of receiving sales representatives from the manufacturing plants.

**PULP.**—There is a fair demand for bleached sulphite and contracts are now being renewed for the coming year in some cases at the high prices that have prevailed throughout the boom period. It is generally conceded that there will be a good demand for the coming season, although there has been a slight falling off owing to the quiet period in the paper trade and the hesitancy on the part of printers and jobbers to stock heavily. The prevailing prices for bleached sulphite are from \$195 to \$210 at the mill, depending upon freight rates, while unbleached is quoted at from \$165 to \$175. Ground wood pulp is a little easier in tone and is now selling at from \$105 to \$125, although there is no disposition on the part of the paper mills to pile up reserve stocks.

**BOOK PAPERS.**—A feature of the book paper trade is the effort now being made by the mills to place their output. This does not mean that there is any great lack of business, but is indicative of the paper trade generally which has now reached a stage where it behooves both manufacturers and jobbers to canvass for orders. For months past the output of the mills has been greatly oversold and the orders that came in were attended to in rotation. There has been a gradual catching up during the past few weeks and the jobbers are now rather enjoying the novelty of having the mills solicit their business. Mill representatives are now waiting on the jobbers for orders of book papers, not for immediate delivery but for future business. The mills desire to keep several months ahead with their orders if possible and at the present time are endeavoring to keep up their volume of business ahead. As there is an excellent demand for book paper they should have no difficulty in doing this

although the jobbers report that there has been a falling off in orders. Buying is considerably more conservative than it has been for a long time and the printers continue to hold off, at the same time using up all their available stocks for their jobs, which it is claimed, will mean a renewal of buying when stocks get down to the vanishing point. During the past week a letter was received in Toronto from a prominent Scotch paper dealer in Canada for book paper from the British Isles, the matter of delivery is very problematical, owing to labor troubles, and that there is no immediate prospect of serious competition from this direction. In the meantime prices for the Canadian product keep up, although occasionally a jobber is found who is offering slight cuts. Jobbers in Toronto are now paying the mills 20c in earload lots for No. 1 M. F. laid down in Toronto, S. C. Book is quoted at 20½c, and No. 2 M. F. is selling at 18½c, No. 2 S. C. book is selling at 19c a pound although these quotations are still subject to prices prevailing at time of delivery.

**KRAFT.**—Business in kraft papers is reported as somewhat dull. It is pointed out that many of the jobbers are about to take stock and that for this reason buying has been light and will be light until the beginning of the year. The mills have been gradually catching up with their orders with the result that whereas a few months ago manufacturers reported orders on hand sufficient to keep the machines going for five and six months, the present unfilled orders can be turned out in one month's time. Although at the present time the kraft mills are only a month ahead with orders, a fairly satisfactory volume of business is coming in and by the first of the year it is expected that their lead will be considerably increased. Kraft is now quoted at 13c and kraft pulp at \$150 or less, which prices have prevailed for some weeks past.

**COATED PAPERS.**—The coated paper mills report their customers as holding up on their buying, although the demand for their product is sufficient to warrant the mills buying considerable stock for coating. One mill in the Toronto district states that they are buying all the stock they can get, believing that the era of buying and selling by the jobbers is going to set in again very shortly. No. 1 coated is now selling at 20c at the mill and No. 2 at 19c.

**WRAPPING PAPERS.**—Jobbers in wrapping papers report that orders are light and that the buyers are holding off. Their customers are using no more paper than is absolutely necessary and the jobbers are now going after business. Shipments from the mills are coming through more freely and while business generally in the wrapping paper trade has fallen off, there have been no reductions in prices. Kraft papers are reported as considerably easier, although manillas and fibres are still rather scarce.

**TISSUES AND TOILETS.**—Manufacturers report that although there is a very good demand for all light weight papers, orders have been decreasing in size and somewhat in quantity, although a satisfactory volume

of business is being handled. Tissues and toilets remain firm in price and no changes are looked for in the immediate future. Some manufacturers are preparing to turn out some cheaper lines in order to meet the American competition in this line and these should be on the market shortly.

**MANUFACTURING STATIONERS.** — Although there has been a falling off in the buying of books the demand for stationery keeps up and prices are firm. All of the manufacturers are busy and report having had a good season for Christmas goods. The raw stock situation has eased off considerably and deliveries are now coming through to the factories much more freely.

**BOX BOARD.**—Box board mills report that they now are only about four weeks behind with orders whereas only a few weeks ago several of the mills had tonnage guaranteed ahead for four and five months. The new list of reduced prices which went into effect a week ago has had the effect of meeting the American competition, which, although it threatened for a time, was successful in getting but very little Canadian business. At the present time there is only a fair demand for the product but it is quite likely that what business there is going will be placed with the Canadian mills who, when shortage and prices reached their apex, were careful to take care of the requirements of the Canadian dealers and gave good service. It is generally recognized that the United States mills only come over here to hit the market when it is dull over there and now that this period appears to have arrived there is a disposition on the part of the Canadian jobber and consumer to stand by their own mills.

### NEW YORK MARKET.

New York, November 20.—(Special Correspondence) —In describing prevailing conditions in the paper trade a line should be drawn dividing the contract branch of the business from the spot market. One end of the trade that applying to contracts—is characterized by steadiness and prices in this connection are maintained, with quotations in some cases evincing a decidedly upward tendency. The spot market for paper of all kinds, on the other hand, is distinctly weak, and prices are declining in most instances in consistent fashion. Consumers continue to keep out of the spot market excepting of course when in immediate need of paper, and even then they are confining their orders solely to amounts actually required. The result is that those mills which during the trying times of a paper shortage in recent months refused to accept contract orders and reserved the great bulk of their production for sale to transient buyers at the highest prices obtainable are now sadly in want of business, and are in frequent cases being obliged to close down or at least to reduce operations. Practically all of the recession in paper prices of the past few weeks has involved prices on spot shipments. The contract basis on about every description of paper is holding, but consumers are repeatedly acquiring supplies in the open market at sharp cuts in price; the decline in spot values having reached proportions where spot prices are today within close proximity to the contract basis.

To put it mildly, there is a pointed absence of important activity in the market. With business in all lines steadily slowing up, the consumption of paper has decreased and users and jobbers are refusing

to buy except in hand-to-mouth fashion, presumably figuring that it is unwise to lay in stocks on a falling market. Mills with contracts on their books are keeping fairly busy notwithstanding they have had a good volume of their orders cancelled, but some manufacturers are in a bad way and are securing far less business at the lower prices obtaining at present than they were when quotations were at the top several months ago. Fortunately, the wave of commercial depression sweeping the country has not undermined the confidence of paper manufacturers, and while prices are being reduced by leaps and bounds in some cases, the decline is orderly and the market retains its equilibrium. It has been frankly admitted by conservative members of the trade that spot prices on paper have been too far out of line with those at which manufacturers have accepted orders from contract customers, and a consensus of opinion is that the nearer equalization of the two is bound eventually to make for a sounder and healthier market condition under which consumers will acquire greater confidence and will in due time resume buying on something like a normal scale.

Spot prices on newsprint are fairly well established at 7 cents per pound at mills. There have been reports of sales of some lots of imported newsprint at a shade under this figure, but it can be stated that most of the business current in print paper in standard rolls is being done at 7 cents or higher. Receipts of newsprint from European sources seem to be on the increase, and this, of course, is a weakening factor, for frequently when a shipment arrives here on consignment, the paper is disposed of for whatever can be realized. Just what tonnage is coming across the ocean is problematical as Government import statistics for the past several months are not yet available, but one has only to scan the manifests of steamers reaching this port to see that some pretty large quantities of newsprint are coming into the market. The contract basis on newsprint is maintained and the trade is on edge waiting for announcement from the leading producing company in the United States as to what its contract price will be on deliveries commencing January 1 next, which, it is understood, will be made public before December 1. There are rumors that it will be 7 cents a pound, or an advance of half a cent over prevailing contract prices, but for that matter there are various prices rumored, higher and lower than now obtain, and they are merely rumored.

Nothing of a startling nature has developed in book papers. Spot prices are gradually moving downward, whereas the contract basis rules unchanged. Wrapping papers appear in moderate demand though the average mill producing this kind of paper is looking for orders. Tissues are quieter than formerly and most mills are said to be near to a point of shutting down. Fine papers are in slack call but prices are holding comparatively steady. Manufacturers insist that the cost of producing writing papers has not decreased one iota and therefore contend they cannot afford to lower quotations.

Boards are in a somewhat steeper position although demand has improved but slightly, if any. The temporary retirement of manufacturers from the market, however, has created a more stable situation, and quotations are well established at \$60 per ton at mills for plain chip and \$70 for news board.

**GROUND WOOD.**—Prices on ground wood have



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slumped badly this week. Additional receipts of mechanical pulp from European sources and the anxiety of importers to dispose of supplies as they arrive have led to price-cutting, and there have been offers of foreign ground wood down to \$90 a ton ex dock and of domestic pulp for prompt delivery at \$100. Demand is narrow, consuming mills as a rule getting along with contract supplies without having to operate as buyers in the open market, and indications are that if present conditions exist much longer a surplus of pulp will undoubtedly arise. Board manufacturers are absorbing little tonnage, and there is but a spasmodic demand from other consuming quarters.

**CHEMICAL PULP**—Members of the chemical wood pulp trade are marking time. There is little demand of worthwhile volume and the situation is such that buyers experience no difficulty in acquiring most grades of pulp at concessions in price although it cannot be said that the market tone is weak. Producers are not pressing consumers and are generally content to hold surplus lots of pulp, but at the same time few are turning down offers of prices within a near radius of what are commonly recognized as approximate market levels. Domestic bleached sulphite is available at 11 cents per pound at pulp mills and foreign bleached sulphite at 12.50 cents on the docks. News grade sulphite is holding steady at around 7 cents and domestic easy bleaching at 8 cents. Kraft has not changed from a quotational basis of about 6 cents for No. 1 domestic and 6.25 to 6.50 cents for Scandinavian kraft.

Arrivals of foreign pulp at New York during the week include 2,825 bales from Gothenburg, 5,836 bales from Rotterdam, and 130 bales from Trieste.

**RAGS**—There is little life to the papermaking rag trade. Mills are mostly keeping out of the market, presumably having ample stocks to cover present wants and not being desirous of purchasing on a falling market. In the absence of actual transactions involving sizable amounts of rags, prices are mainly nominal. Buyers in need of supplies can invariably find rags at attractive concessions from the prices asked and the bulk of what business is passing is being done at figures under quoted levels. Even new cuttings of some kinds are easing off, sales of No. 1 white shirt cuttings at 24 cents a pound at shipping points and of No. 1 new washables at 10.75 cents having been noted. Roofing rags are down further to about 1.10 cents a pound for No. 1 packing and one cent for No. 2 grade. Old whites and blues are largely neglected and easy in price.

Receipts of foreign rags at New York this week include 1,027 bales from Antwerp, 200 bales from Rotterdam, and 1,683 bales from London.

**PAPER STOCK**—Box board mills are still absorbing old papers in limited volume and demand from other sources also is light, with the result the market rules unusually quiet. Collectors and handlers of waste paper in New York City have instituted another strike because of a cut in their wages, but this development has scant influence on the market for the reason that consumers are not purchasing enough material to permit the entailment of production to be felt. Prices on all grades of old paper, with the possible exception of white shavings, are moving lower, and in some cases it is questionable just how low purchases could be engineered. No. 1 mixed paper has sold down to 45 cents per hundred pounds at shipping points, folded newspapers at 90 cents, No. 1 over issue newspapers at 1.25 cents, heavy books and magazines at 1.85 cents and old No. 1 kraft at 3.85 cents. Dealers are endeavoring to impress upon consumers that now is an opportune time to lay in stocks but the latter seem resolved not to place orders until possessed of a more concrete idea of what their future requirements are likely to be.

**OLD ROPE AND BAGGING**—Old bagging is scarcely wanted by paper mills and prices are mainly nominal at about 1.75 cents per pound for No. 1 scrap bagging and 90 cents per hundred pounds for roofing bagging. Old rope is holding its own in price at a quotable range of 5.75 to 6 cents a pound for manila rope at shipping points.

#### INDUSTRIAL ITEMS.

The Gibbs-Brower Co., 261 Broadway, New York, who carry on the interesting business of buying and selling pulp and paper mills, have taken on the sole agency for the Koegel knife grinder, which appears to be quite a versatile machine.

Mr. F. G. Warburton, who designed the Harland sectional electric drive for the Laurentide, Howard Smith, and Interlake paper machines is in Canada supervising these installations.

Armstrong-Whitworth of Canada, Ltd., have taken over the manufacturing rights for the pulp mill machinery designs of Jensen and Dahl, one of the best known Norwegian firms in this line. The company's plant at Longueuil, near Montreal will be used for the new line.

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# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., December 2, 1920.

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## TABLE OF CONTENTS

### Editorial:

Sulphur in Ontario . . . . .	1223
Use the dead stuff . . . . .	1224

### Special Articles:

Additional notes on the progress in the study of wood and wood pulp, infection and decay . . . . .	1225
A paper with chemist's views on German paper clothing . . . . .	1230
The practical training of a forester . . . . .	1232

### News of the Industry:

Where is Wooden? . . . . .	1224
To make photographic paper at Edgemont, Ohio . . . . .	1230
U. S. production of newsprint in October.	1231
Arnold Hansson's promotion . . . . .	1231
Woodlands Section meets next week . . . . .	1233
Spanish River plans adjustable contract.	1233
Prices . . . . .	1233
The future of timberlands, pulp and paper	1234
Germany's paper boom . . . . .	1234

3,000 cutting Abitibi's pulp wood . . . . .	1235
Pulp and paper exports up 34 per cent . . . . .	1235
Dutch lift paper export embargo . . . . .	1235
Dozed on mill belt . . . . .	1235
Abitibi pulp and paper classes started . . . . .	1236
British trade news . . . . .	1237
New member of Technical Section . . . . .	1238
United States notes . . . . .	1240
Pulp and paper news . . . . .	1241

### Miscellaneous Information:

Efficiency . . . . .	1224
The strength of trees . . . . .	1235
Where Canadian book paper goes. . . . .	1236
Review of recent literature. . . . .	1238
Co-ordination of science . . . . .	1239
New cellulose periodicals . . . . .	1239

### The Markets:

Canadian trade conditions . . . . .	1242
Chemical quotations . . . . .	1244
New York markets . . . . .	1244

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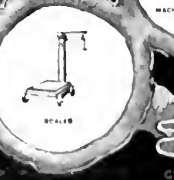
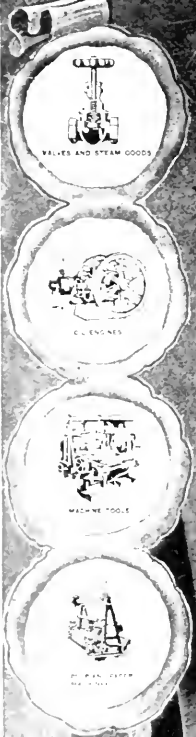
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# EDITORIAL

## SULPHUR IN ONTARIO.

An article appeared in the "Financial Post" a few weeks ago, contributed by Mr. D. E. Cushing, the Cobalt correspondent of that paper, in which the pulp and paper industry was criticized for not making use of the sulphur deposits in Ontario. Some of the statements made would give the impression that a novel suggestion was being put forward. Most of the points brought up have been referred to in the Pulp and Paper Magazine in our issues of August 30th and September 13th, 1917. In the first issue referred to, we showed that Canada is dependent on the United States for practically all of the sulphur used in the several industries that require it, but of the amount imported however, considerably more than half that used in pulp mills, in making the paper and pulp exported, goes back to the United States.

At a meeting of the Technical Section of the Canadian Pulp and Paper Association, a careful review of the sulphur situation, the amounts available in Canada, and the methods available for their utilization, was given by Dr. A. W. P. Wilson. Dr. Wilson is also the author of a report of the Mines Branch entitled "Pyrites in Canada," in which it is shown that this material, which is available, as far as proximity is concerned, to nearly every important chemical pulp mill in Canada, would require equipment considerably different from what is used at the present time.

The contribution of Mr. Cushing to the "Financial Post" intimates that these deposits have not been investigated nor seriously considered with a view to their use in sulphite manufacture. Exception is taken to a statement in that paper by a writer in the "Broke Hustler," which is published by the Abitibi Power and Paper Company. In the reply it is stated that only flour of sulphur is used by the pulp mill and no one company could afford to extract this (by roasting) from pyrites. It is possible, of course, to convert most of the sulphur in pyrites to the form mentioned, but such a procedure would seem to us an entirely unnecessary one since pulp mills in Scandinavia and sulphuric acid plants in this country are burning the ore and immediately getting the sulphur dioxide gas which is the material desired for use in their respective processes.

The "Broke Hustler" takes the safe attitude that the development of the sulphide deposits—they should not be called sulphur deposits as this confuses the pub-

lic mind—is a matter to claim the attention of the mining men rather than pulp and paper companies. The latter will only be too glad to get Canadian sulphur, and would be willing to co-operate in an effort to make these Canadian deposits available. The "Broke Hustler" intimates that roasting of low grade ore dumps, which contain valuable metals, particularly gold, would produce flour of sulphur and permit the extraction of metal values. This hardly agrees with our conception of economic metallurgy, but it certainly is possible to extract sulphur dioxide from smelter fumes and liquify it for immediate use in the pulp mill. This matter was discussed in our report on the visit last June of the Technical Section to the plant of the International Nickel Company. It would appear from the mention in these papers of names connected with the gold mining industry, that only the sulphides of the more valuable metals are being considered. It seems to us more important as a source of sulphur for pulp making, that consideration be given to the enormous deposits of iron pyrites in Ontario and Quebec.

In support of the "Broke Hustler" with regard to the interest of the pulp and paper industry in the local source of sulphur, we shall quote the closing paragraph from our contemporary:

"Mr. Cushing ends by saying that A. F. Brigham, General Manager of the Hollinger Mine, has taken the matter up with Premier Drury. This looks as if there was a hen on, and that the criticism of the pulp and paper companies was intended to conceal another operation altogether. It is time that the public knew that the lack of development of the sulphur deposits is not due to the pulp and paper industries, but to the mining industries. It should also be known publicly that if the sulphur deposits of Northern Ontario are to be developed, now is the time to do it. The pulp and paper companies have been for some time considering the use of liquid sulphur dioxide from the nickel mine at Copper Cliff and other users of a sulphur ore. Unless the sulphur deposits are shortly developed to provide a supply of flour of sulphur at a reasonable rate, pulp companies will have their arrangements made for the use of this liquid, which would mean to them considerable reduction in the expense of plant."

When things don't come your way it is a sign that you should be going after them.

*USE THE DEAD STUFF.*

We are repeatedly getting reports of the amount of timber killed by fires and the spruce budworm and the quantities estimated as thus destroyed are continually increasing. The damage by fire in certain areas, particularly those under the jurisdiction of such protective agencies as exist in Quebec and where government railways do not operate, are greatly decreased. The ravages of the budworm, however, have now spread to most of the forests of eastern Canada and in some sections forty per cent. or more of the standing timber has been destroyed. Immediate steps should be taken toward the removal of this material and its utilization. Where such stands occur on crown lands we should like to see an order requiring operators to cut first this infested or dead timber. If doing so should involve additional expense over the cutting of the live trees, a proportionate rebate of the dues should be made. If the Forestry Departments of our eastern provinces have not the power to require in the public interest that private operators follow a similar plan, we should urge the passing of such legislation as will enable such action to be taken. Furthermore, there should be concerted action with regard to this matter by the chief foresters of our eastern provinces.

The reason for requiring immediate action along this line should be obvious. In the first place if this timber is left in the forest it will only blow down, become infested with fungus and attacked by insects and be a complete loss besides creating a serious fire menace as a standing invitation to sparks from locomotives and strokes of lightning and a very serious handicap to the fighting of any fire that might get started. Let us suppose that this winter the normal cut is taken from the forest, approximately in the same proportion as present dead and standing timber. We shall have taken from the woodlands an amount of living trees equivalent to from sixty to perhaps seventy-five per cent. of the total which might have been dead timber, had only dead timber been removed; the living trees cut down will grow no more, and the dead ones left in their place will rot, trees will in effect be a thinning of the forest and a consequent improvement of growing conditions. The effect of taking out the dead timber now would thus serve several ends. It would serve for industrial purposes what otherwise would be waste, it would save for future growth under better conditions, trees which otherwise would be removed and would greatly improve the chance of the forest against fires and budworm. We believe that not only these steps should be taken but that in the cutting of this dead stuff the operator should be required to burn the slash and thus do away with practically every form of fire, fungus and insect hazard to the trees that would be left.

We realize that such a method of operation would

entail some sacrifice, perhaps, on the part of some operators but we believe that the lumbermen and the pulp and paper manufacturers of Canada have sufficient public spirit to give the Forestry Department confidence in anticipating their full co-operation in so carrying on their operations as to most effectively preserve our forests and consequently to insure their own raw material for their own business. In asking operators to make such a sacrifice for the public good the Government, which is the trustee of posterity, should share the burden.

*COBWEBS.*

We are indebted to the Southern Cyprus Manufacturers' Association of New Orleans for an exceedingly interesting and instructive book on birds with working plans for making 20 kinds of bird houses. This little book should succeed in encouraging the love and protection of our good friends the birds. We especially enjoyed the story of George Stephenson, inventor of the locomotive, and a bird.

It is estimated that Canada could produce annually 5,000,000 gallons of 95 per cent. alcohol from sulphite waste liquors.

We heard a man say that the ground wood market had gone to smash—meaning that pulp had sold for less than \$100 a ton.

Munsey has bought the second oldest paper in the United States, the Baltimore American, founded in 1773. That paper has been worried about its supply before now.

*WHERE IS WOODEN ?*

Howard Wooden, 22, who is believed to be employed as a back tender or machine man in some paper mill, is requested to communicate with his former home in Richmond, Va. Trade publications in the United States have been asked for information as to Wooden's present whereabouts.

*EFFICIENCY.*

There has been much discussion in recent months of efficiency, bonus, production, safety, welfare work, and kindred subjects and we would like to utilize some space to explain what it is all about, in order that everyone may have a better understanding of the reason for all this agitation. Like everything else we will have to blame it on the war; the war caused a shortage of men; the war caused a shortage of goods — materials of all kinds; the war caused a shortage of ships and of railroad cars; in short, the war hit us where we all feel it; it raised the cost of living, that is, it seriously unbalanced a very delicate thing—our economic structure. And what we will want to know is, how are we going to get it back into balance? The answer is: "Work like hell!"—Shawinigan Falls Review.



## Additional Notes on Progress in Study of Wood and Wood Pulp Infection and Decay\*

At the June meeting of the American Pulp and Paper Mill Superintendents Association the speaker had the opportunity of giving a brief talk on wood pulp infection and decay. Since that time considerable work has been done and the problem of the possible prevention of the loss of pulp through such infection and the curtailment of the spread of decay through the wood storage pile is of such importance that a short outline of the results obtained with a frank discussion and interchange of ideas may not be amiss.

In discussing the results of this study it appears desirable to divide the work into two sections dealing, respectively, with the pathological and chemical investigations. The pathological work includes a study of the various molds and wood-destroying fungi commonly found on pulp and pulp wood with the object of preventing deterioration of the pulp during storage and of reducing decay in wood in the storage yard by improved sanitation and minor changes in methods of handling. The chemical study includes an investigation of the chemical changes involved during decay of the wood and wood pulps and a study of the losses involved in pulping infected wood in comparison with sound wood.

The speaker, in company with Mr. Humphrey, visited during the past summer some eighteen of the co-operating mills in order to secure data relative to the present methods of storage of wood and wood pulp and to determine the extent of prevailing losses. The following remarks are taken directly from a previous report but in view of the tremendous importance of this problem and the losses sustained by the industry we feel that a restatement will not be out of place.

Losses from decay in the wood pile at many mills are staggering, the amount of deterioration depending on the method of piling, age of the wood, and sanitary condition of the yard.

Broadly speaking, there are two general types of wood storage: (1) In the yard, either in ricks or in large conical piles; (2) Water storage, in which the wood is unloaded into the river. It is believed that with certain modifications yard storage is preferable. Water storage by complete submersion is theoretically ideal, as no decay can take place when wood is in a saturated condition; however, under present commercial practices this condition does not hold, for a large part of the logs are floating, with the exposed portion often dried out sufficiently for decay to take place. In addition to this the logs are often jammed or left exposed on the banks at low water; also, when unloaded from ears into the river high piles are built up extending out into the water and the greater portion of this wood is exposed under very favorable conditions for decay, particularly in a zone just above the water line.

As between ricking wood and dumping it from conveyors into large conical piles the consensus of opinion appears to be in favor of the ricks, provided these ricks are separated from each other by continuous air passages at least 3 feet wide to allow for uninterrupted circulation of air.

In general, present wood storage conditions at the

mills are deplorable and too much emphasis cannot be laid on the necessity for reforming present practices.

Many of the yards are practically littered with rotten or infected woody or bark debris which serves as a source of infection for new wood and hence should be removed and burned. A considerable number of yards are on low ground which should be filled with dirt, surfaced with cinders, to secure necessary drainage and keep down weeds and grass which impede the circulation of air around the base of the piles.

Likewise good sound foundations for ricked wood which are well off the ground are conspicuous for their absence. Not a single mill was properly equipped in this respect. Present practice consists either in piling directly upon the ground or on pulp logs laid lengthwise of the piles and often pressed deeply into the soil.

These conditions must be corrected before the mills can hope to control the decay problem. A summary of points to be observed as far as possible in modifying present practices is as follows:

1. Ship pulp logs as soon as possible after cutting to avoid their lying in the woods where high moisture content and growing vegetation tend to cause infection and decay.
2. Peel logs if possible, as this prevents borers from attacking the wood, and also hastens air drying, thus tending to prevent decay.
3. Remove decaying wood from the yard to eliminate the source of infection for new wood.
4. Drain and care for storage yards so as to reduce the soil moisture as far as possible; cut weeds to allow for better ventilation.
5. Fill in yard with cinders; this gives good drainage and keeps down weeds.
6. On removal of a pile of wood, clean up bark and burn skids if they are badly infected. Under all circumstances infected skid logs should be removed. The yard should never be placed on ground filled in with barker waste.
7. Do not rick wood directly on the ground. The best procedure is to put in concrete piers supporting stringers, which have been given a pressure treatment with coal tar creosote, on which to pile the logs. Such stringers should not be brush treated but should be pressure treated and will last at least twenty years. In case it is not considered feasible to equip the yard with concrete piers the next best practice would be to use wood blocking pressure treated with creosote as supports for the stringers. In any case, the stringers should be at least 12 inches, and preferably 18 inches off the ground so as to allow for ample ventilation from the sides.
8. Mark each log pile as it is received with date at which it was piled and if possible age of the wood. Use up wood in rotation. If ground in the yard is available pile so that the full length of the pile is exposed to the prevailing wind. Never place two piles with less than a three or four foot space between the piles.
9. Where timber is placed in conical piles by conveyors, a possible remedy may be to keep the wood saturated with water by means of an overhead sprinkler system, delivering the minimum amount of water necessary to keep the surface of the pile wet. This is

\* Address by OTTO KRESS at Woodlands Section Meeting, Chicago, Nov. 12, 1920.

based on the fact that wood saturated with water will not rot because there is not sufficient air within the timber to allow the fungi to grow. Whether it is commercially possible to wet the piles down sufficiently and maintain them in this condition must, however, be demonstrated by actual test. If effective, the mills will have accomplished two objects, namely, protection against both fire and rot. It is our understanding that certain mills are now trying out this scheme mainly on the recommendation of Mr. F. J. Hoxie<sup>(1)</sup> of the Factory Mutual Fire Insurance Companies of Boston.

Fundamental laboratory studies are also under way to determine the moisture limits at which wood destroying fungi will rot the timber. The results of those tests will indicate just how wet the timber must be kept to check decay.

#### Study of Infection and Deterioration of Ground Wood Pulp and Possible Means for Overcoming the Same. (2)

When this investigation was undertaken it was understood that the study of the causes and possible prevention of infection and decay of groundwood pulp was of primary importance but from observations it appears to us that the prevention of further decay in pulp wood as received at the mill is of greater importance from a monetary consideration. While the mills are receiving and will continue to receive infected wood certain changes in storing, coupled with the use of the piles in rotation, will tend to minimize the loss from decay.

Following out the first supposition the problem was then initially attacked along the lines of preventing the development of molds, bacteria and wood-destroying fungi in stored groundwood and sulphite pulp by the addition of antiseptics to the wet laps either on the wet machine or after removal from it.

The method consists in applying the antiseptic solutions in the form of a fine spray by means of an ordinary garden sprayer working by compressed air. Altogether over 5,000 laps of groundwood pulp, approximately 12 inches by 24 inches, and 1,000 laps of sulphite pulp have been thus treated varying concentrations of 105 different chemicals of possible antiseptic value.

After applying the spray, part of the laps were inoculated with a mixture of a large number of molds previously isolated from badly infected pulp, and the remainder with several species of wood-destroying fungi likewise secured from decayed pulp. The laps were then stored in close piles in a special shed in which both the temperature and atmospheric moisture are held at a point favorable for the development of the organisms.

Inspections are made every four to six months and the conditions of the treated laps noted, as compared with untreated pulp stored in the same piles.

Records are taken of the moisture content of both the treated and untreated laps, at the time of spraying, as well as the amount of antiseptic solution applied.

At the present time the two oldest series of these

tests have been running 13 and 14 months, respectively. Eleven of the antiseptics in the first series proved highly effective; only two were satisfactory in the second.

Recently one of the co-operating mills sent to the Madison laboratory about three tons of rotten groundwood pulp which was used as a source of further infection for the treated laps which had stood up against previous tests. These laps have been inserted in a large pile of the decayed material and thus given as severe a test as it is possible to devise.

Through the courtesy of one of the co-operating mills we have also been enabled to spray about one and a half tons of groundwood pulp. Thirteen of the more promising of the antiseptics and five additional oils which may prove toxic, were used. The solutions were poured into a barrel above and back of the wet machine. Copper pipes led from the bottom of the barrel to a pipe, perforated with small holes at regular intervals, which extended along the carrying roll and two inches above it. A felt strip was suspended from this pipe to the sheet of pulp. The perforations of the pipe were turned upwards about 15 degrees from the horizontal thus allowing the chemical to flow down the cloth onto the pulp. By regulating the flow of the chemical, measured amounts were put on definite amounts of the pulp. The sprayed laps together with an equal amount of unsprayed pulp from the same run were piled in a basement storage room under conditions favorable for its deterioration. Other pulp will be piled around it and the whole will be left for six months. Then it will be examined to observe the efficiency of the antiseptics against infection.

To date, some 70 odd organisms have been isolated from pulp and when it is considered that the antiseptic must prevent the development of any of these different organisms, a better conception is obtained of the difficulties encountered. Further, the costs of the treatment must be considered so as to avoid excessive cost per ton of pulp treated. The problem is also complicated by the high moisture content of the pulp as taken from the wet machine which is only one-third dry, thereby diluting each ton of dry pulp by two tons of water and reducing the concentration, and hence, the toxicity of the antiseptic. Further, some of the antiseptics which gave the best results are to poisonous and dangerous for mill use while others darken or discolor the pulp or injure its quality.

Naturally, the treatment of pulp on the wet machine with even the cheapest antiseptics will add to the cost of the pulp. As pulp, however, must be stored over periods of low water, the cost of such treatment must be looked upon as a necessary insurance. Naturally, pulp that will not be stored for a longer period, but will be used within two to three months, needs no protection except the taking of the necessary precautions to store it under sanitary conditions.

The following remedies are suggested to prevent decay of wood pulp during storage:

1. Proper rotation of the piles of pulp, storing if necessary in several smaller piles in order that the oldest pulp will be used up first.
2. The use of antiseptics applied probably in the form of water solutions on the wet machine, provided that the laboratory trials develop a successful and fairly cheap method of treatment.
3. Storage of pulp on concrete floors, avoiding contact of the pulp with the ground or with planks that

<sup>(1)</sup> Copies of Mr. Hoxie's address before the Technical Section of the Canadian Pulp & Paper Association, may be obtained from the Pulp & Paper Magazine at 10 cents each.—Ed

<sup>(2)</sup> Some literature of this subject is available from the Forest Products Laboratory of Canada, Montreal.

may have become badly infected from previous pulp. Concrete floors should be provided with proper drainage and after complete removal of the pile should be hosed off, the drain capped, and the floor sprayed with an effective antiseptic as an additional precaution.

4. Avoiding piling of fresh pulp on old pulp, as this spreads the disease in case the older pulp is infected.

5. Removal of badly infected pulp, burning same if too badly decayed for use in paper making, also burning planks, skids and other infected debris in the neighborhood of the pulp pile.

6. Keeping down weeds near the pile and filling the surrounding area with cinders to assist in proper draining of the ground.

#### Study of the Chemical Changes Involved During Infection and Decay of Wood and Wood Pulp.

Through the courtesy of the co-operating mills, a number of shipments of infected spruce, hemlock, balsam and aspen wood and of infected pulps were received for chemical and pulping studies and for isolation of the typical organisms causing the decay.

A brief consideration of the chemical changes involved in the decay of the four chief pulp woods; viz., spruce, balsam, hemlock, and aspen, throws additional light on the astounding losses sustained through the decay of wood and the further losses involved in the pulping of such infected woods.

Complete analyses of sound and infected woods and of pulps made from these woods indicate quite clearly that wood does not break down to the extent that might be expected by a strictly selective action of the organisms either on the cellulose or the encrusting material but rather by a more uniform degradation of the wood. In cases of extreme decay, however, the cellulose breaks down to a larger extent than the encrusting material.

Assume a unit volume of sound wood weighing 100 lbs. bone dry becoming infected so that the wood now weighs only 80 lbs. bone dry. The volume through such decay has not changed but it must be remembered that pulp mills are purchasing wood on volume or cord basis and selling pulp and paper on a weight basis. A further loss in pulping now occurs either by the mechanical or chemical processes of pulping in the following way. Pulping trials on infected woods, figuring yields on the weight of bone dry wood pulped, gave us rather puzzling yields of 45 per cent, which are equivalent to the yields obtained on a weight basis from sound wood. A large number of cooks thus made by both the soda and sulphite processes on a number of shipments of infected wood in all cases, with but one exception, gave yields on the weight bases of approximately 45 per

cent, or the same as is obtained from sound spruce, balsam, hemlock, or aspen. The exception was that of very badly infected spruce which with a cellulose content of 41.99 per cent gave a pulp yield of 39.64 per cent crude pulp containing 1.19 per cent screenings.

In Table I is given the essential pulping data on some shipments infected spruce wood.

The screened unbleached pulps obtained for cooks 6, 7, and 9 were analyzed for cellulose content and for Alpha, Beta, and Gamma cellulose content. The results of these determinations are shown in the following table.

Pulp from Cook	Cellulose	Alpha	Beta	Gamma
No.	p.c.	p.c.	p.c.	p.c.
Slightly infected wood . . . . .	96.75	72.96	22.00	5.04
Wood nearly sound . . . . .	95.73	75.83	17.85	6.32
Wood very badly rotted . . . . .	94.41	46.05	48.52	5.33

The data indicates plainly that as the decay progresses the percentage of cellulose decreases but far more indicative of the progress of the decay is the decrease in the amount of the Alpha or stable cellulose, and the very decided increase in the percentage of the Beta or unstable cellulose. This is true both for the raw wood and for the pulps prepared from them.

Papers made under similar machine conditions from pulps prepared under identical pulping conditions, from woods in various degrees of decay, show a decrease in the strength tests, especially in the following test which measures in part the tenacity and brittleness of the pulp. This is shown by a test of 361 double folds for waterleaf paper made from Cook No. 6 prepared from slightly infected wood, while waterleaf paper from Cook No. 9 from very badly decayed wood made under similar conditions showed a strength of only 26 double folds. Aside from the decrease in strength, chemical pulps made from infected wood are more dirty, tend in the case of pulps prepared from badly decayed woods, to hydrate readily and are decidedly darker colored. (Such pulp would show excessive loss on bleaching.—Ed.)

These apparent abnormally high yields of pulp can best be explained by the breaking down of the encrusting materials through the mechanisms of decay into simpler compounds that can be readily removed by the

\* The samples represent different shipments of infected white spruce obtained from different mills. Cooks 8 and 9 are duplicate determinations. (See Tab. I.)

Table I.

Sample	Cook No.	Crude pulp p.c.	Screened pulp p.c.	Bleach requir. p.c.	Wgt. of wood per cubic ft. oven dry basis lbs.	Cellulose	Alpha Cellulose	Beta Cellulose	Gamma Cellulose
						p.c.	p.c.	p.c.	p.c.
Infected Spruce*	6	43.9	43.5	14	25.7	46.90	27.75	61.45	10.80
Infected Spruce	7	44.6	43.8	14	28.2	54.18	42.86	37.68	19.46
Infected Spruce	8	47.4	46.8	16	24.0	.....	.....	.....	.....
Infected Spruce	9	39.7	38.4	20	24.1	41.99	18.97	72.92	8.06
Infected Spruce	10	45.9	45.1	16	24.0	.....	.....	.....	.....

cooking liquor without causing a decided degradation of the cellulose present in the wood. There is no question but that in the pulping of sound wood a percentage of the cellulose is broken into simpler compounds removed by the cooking chemical.

If wood were bought on a weight basis then proper allowance would be made for the percentage decay, but this is not the case. For example, if a unit volume of woods weighs in a sound condition 100 lbs. and after infection weighs but 80 lbs. then assuming a 45 per cent yield there would be obtained yields of 45 and 36 lbs. of pulp or an actual loss of 9 lbs. of pulp per unit volume of wood. Actual mill trials show that the cord of rossed spruce used weighs 2,400 lbs. so that in the example given there would have been on the same basis of decay a loss of 216 lbs. of bone dry chemical pulp.

The losses from a groundwood pulp stand point are even more serious. A mill run on sound and infected spruce showed yield figures, on a weight basis, of 94.5 per cent and 78.5 per cent, respectively, and on a cord basis a yield of 390 lbs. more pulp per cord of sound wood than was obtained per cord of infected wood. Aside from these actual losses there is a very decided further loss which, however, cannot be accurately estimated, from the decrease in quality of the stock made from infected wood. The difficulties encountered in using decayed pulp or pulp made from decayed wood are evidenced also by loss in production due to difficulty in drying the paper, increase in size consumption, and amount of longer and better fibred stock required to maintain the strength. Further, the infected pulp is always dirty, off color and decidedly brittle.

#### Paper Making Tests on Badly Decayed Groundwood Pulp.

In a previous paper by Kress, Humphrey and Richards,\* the authors described the results of a study of the infection of groundwood pulp in the course of which paper machine runs were made on clean and infected pulp, and the resulting papers compared for strength, color, freeness from dirt, etc. In general, it was found that the infected groundwood of a condition similar to the shipment received at the laboratory, had the following drawbacks in comparison with clean pulp made from similar wood and under similar conditions:

1. Decided decrease in fibre length, thus affecting the yield, felting quality of the stock, strength of the finished paper, and slowness of the stock.

2. Too great freeness of infected pulp. While groundwood pulp is often considered too slow, the extreme freeness of the infected pulp would offer difficulty in carrying the necessary water on the paper machine and in securing a good formation in the finished paper. It should be remembered that only very badly infected pulp is too free. Pulp which is only partly infected is slower than sound stock, but as the infection progresses

the fibres break up more and the resulting stock becomes very much freer than sound groundwood.

3. Infected pulp is very much darker, thereby dulling either white or colored sheets in which it is used.

4. The yield of finished paper based on the percentage of groundwood used is decreased approximately 10 per cent.

5. The strength of the finished paper is decidedly reduced. In a groundwood-sulphite furnish this decrease in strength would necessitate the use of a larger percentage of the more expensive sulphite pulp in the furnish.

6. Infected pulp on the paper machine offers difficulty in sticking to the couch and press rolls and in excessive foaming.

7. Infected pulp will require more sizing.

8. Infected pulp will make a very dirty sheet.

While sulphite pulp is normally not stored for a sufficient length of time to deteriorate, there is no question that infection will occur provided the pulp is stored under unfavorable conditions. Sulphite pulp, even though it is prepared from badly infected wood is undoubtedly sterilized during the digestion of the wood but later during piling may become infected.

Apparently, soda and sulphate pulps do not readily become infected and from correspondence with the mills we have not been able to secure an authentic sample of such infested pulps. Rag stock in a bleached half stock form is stored for long periods in drainers but infraction of this is extremely rare. One authentic case of such infraction, however, was brought to the attention of the laboratory.

Time does not permit to go into details as to the results obtained from the various pulping trials but the complete data will be published at a later date on completion of the study.

In Table II we have listed the more important chemical constants of three typical spruces, representing a sound wood, a partly infected wood typical of the wood ground daily by one of the large Wisconsin mills, and of the same kind as was used in our mill grinder run and, thirdly, a very badly infected spruce, so badly rotted that it was not used by the mill for pulping purposes. Taking the extremes of the sound for infected wood we find such differences as 5.44 and 11.92 per cent hot water soluble material, 24,000 and 62,36 per cent strong NaOH soluble, and 54.70 and 41.99 per cent total cellulose. Time does not permit us to discuss the significance of the analytical constants which have such decided bearing on the pulping characteristics of the wood and of the quality of pulp produced. The curves which I have drawn for presentation at this meeting show the relation of the more important chemical data obtained from a sound spruce and three spruces of varying infection, also the data on sulphite pulps made from these woods under similar pulping conditions.

TriPLICATE samples of both groundwood and sulphite pulp have inoculated with the various individual molds and wood destroyers isolated from samples of infected

\*The Paper Industry, October, 1919.

Table II. — Analytical constants of sound and infected white spruce on oven dry weight at 105 C

Kind of wood	Ash	Cold water soluble	Hot water soluble	Ether soluble	1% NaOH soluble	7.14% NaOH soluble	Copper number	Lignin	Cellulose	Alpha cellulose	Beta cellulose	Gamma-cellulose	Pento-pan-tosan	Methyl-tosan
Sound spruce	0.34	3.17	5.44	1.58	15.67	24.00	5.55	21.31	51.70	63.55	10.37	26.08	11.00	1.84
Infected mill run spruce	0.75	5.51	9.75	1.39	39.92	49.28	17.48	35.21	46.90	27.75	61.45	10.80	9.45	2.66
Badly infected spruce	0.61	6.58	11.92	1.40	44.00	62.36	23.59	38.20	41.99	18.97	72.96	8.06	8.50	3.77

pulp shipped to the laboratory. The first set of these inoculated samples was opened after six months growth and the samples are now being analyzed. The two other sets of infected samples will be examined at two periods between now and June 1, 1921. In this way definite information will be obtained as to the technical changes involved during decay through the action of individual organisms. Some of these groundwood samples even after only six months test are very badly decayed, the worst showing an actual decrease in weight of 18.13 per cent.

The following table gives a comparison of the original sound groundwood and the six months infected pulp:

	Cold water soluble	Hot water soluble	1 p c NaOH soluble	7.14 p c NaOH soluble	Lignin	Cel-lulose
Sound groundwood	0.13 p c	1.11 p c	10.13 p c	18.28 p c	31.0 p c	69.0 p c
Six months infected groundwood	6.09 p c	11.06 p c	46.30 p c	62.80 p c	35.30 p c	43.45 p c

Aside from the very large loss due to decrease in weight of the pulp, the large cold and hot water soluble content of the infected pulp would cause a further loss in conversion of the pulp to paper.

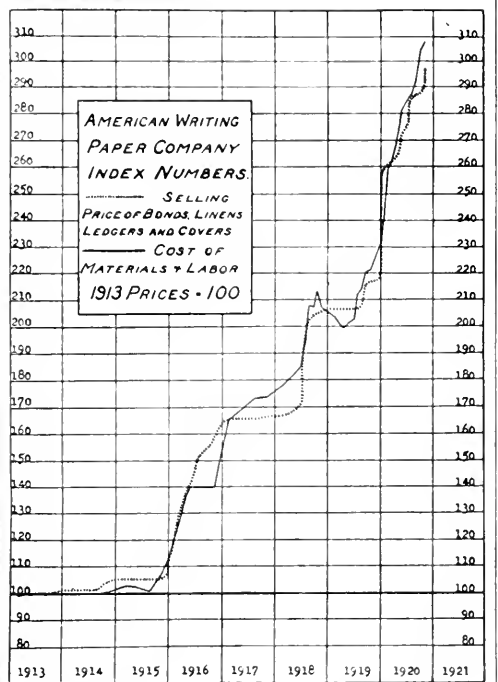
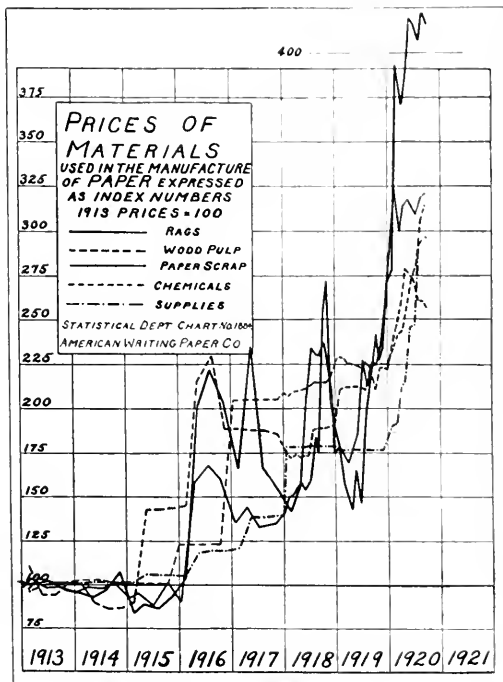
Some interesting work is being done at the laboratory to determine the nature of the cleavage products produced during the decay of the pulp. The direct loss in weight is, no doubt, due to carbon dioxide, water, and possibly methane, which are the end products produced through such decay. It will be attempted to measure the quantity of these products produced from a unit weight of the infected pulp.

When it is remembered that the pulp yield on Northern woods is directly proportional to the weight per cubic foot then the purchase of wood weighing either 28 and 24 pounds per cubic foot makes a decided difference in the weight of actual wood cooked per day. Further, infected wood is brittle, causing a large loss in chipping as is shown by the following table:

Kind of Wood.	% Loss in Screenings of 5/8" Chips
Sound Norway spruce . . . . .	4.43%
Nearly sound white spruce . . . . .	5.62%
Infected white spruce . . . . .	13.22%
Infected white spruce . . . . .	15.60%
Very badly infected white spruce . . . . .	17.02%

It is also to be remembered that chips made from infected wood occupy the same volume space in the digester but will give decidedly lower yields of inferior pulp while consuming the same cooking liquor and steam.

The paper industry must use wood not suitable for lumber as the latter industry can afford to pay more for their raw material. This means that the pulp mills will purchase inferior wood that is only too often badly infected and unless the proper precautions are observed this infected wood will deteriorate very rapidly during storage. Proper sealing is supposed to compensate for rot in the wood as bought by the mills but observation indicates that the pulp mills are in general not making sufficient deduction to cover this.



## A Paper Mill Chemist's Views on German Paper Clothing

There have been many expressions of opinion from textile authorities regarding paper clothing manufactured in Germany, nearly all of which have discredited the probability of such clothing becoming popular. The following article by Martin L. Griffin, formerly chief chemist of the Oxford Paper Company, of Rumford, Me., presents an expert view on the subject from the paper manufacturer's point of vantage in the Daily Mill Stock Reporter:

During the later stages of the war with Germany and her allies, when their resources were fast waning and cotton was no longer available either for explosives or clothing, sulphite pulp was restored to and various fabrics made from pulp, first as a tissue paper and then as a textile yarn were made. A very general use appears to have been made of such fabrics for clothing, furniture coverings, railway carriage seats, etc. Clothing made of such fabrics attracted considerable attention toward the close of the war both in England and the United States on account of its apparent utility and cheapness, and has been given considerable advertising.

There is now an exhibit of paper textile products travelling about the country presumably to show to what extent Germany was reduced to clothe her people and her genius for science and invention; but neither special knowledge, unusual skill, or any invention are revealed in these articles made from paper pulp by the process of papermaking and textiles. It is inaccurate and misleading to speak of these products as paper suits or paper clothing, since they are made from cloth whose yarns are spun and woven by the usual textile processes. The slitting of tissue paper into narrow strips and twisting into yarn to be used as twine has been known and practised commercially for a long time.

Fabrics made from paper yarns have been on sale in the large department stores at various times for ladies' wear. Cloth of this type possesses novel characteristics, being made from a filament of paper, it has a smooth surface free from hairy fibres common to ordinary textiles. Coarse fabrics for floor coverings and rugs have been exploited on a considerable scale at times. These German made paper suits were advertised in England for sale at some two or three shillings and conveyed the impression that they possess much utility for summer wear and would help reduce the high cost of living. Nothing of the kind. I had imagined that paper and not cloth made from paper stock had been used for this paper clothing until I had seen a suit of it. There can be no economy and little utility in attempting to make a fabric requiring the double process of paper and textile manufacture.

Taking the tissue paper from paper mill process is simple. The paper is first slit up into narrow strips ranging from a quarter of an inch to one inch depending upon the number of the yarn desired. These strips are then dampened, twisted in a ring spinning frame wound upon bobbins and the yarns are then ready for weaving in the ordinary way. The cloth is finished in many respects like ordinary cotton textiles having due regard to the fact that the fibres of the paper pulp are relatively very short and that the yarns are accordingly very weak; especially when wet. Careful directions accompany each article as to how the gar-

ment must be handled in washing. Shirts and the like are given a special treatment to soften and make them more pliable. The dyeing is usually done with direct and sulphur colors in jigs and pads, and as would be expected does not penetrate but only colors the surface leaving the central part of the yarn untouched by the dye. So far as I have examined the dyes are little more than stains and bleed badly when wet.

Some of the characteristics of a two-piece workman's suit which I happen to have are as follows: The cloth is of a coarse weave, count 30x9, and differs from plain weave in that the warp threads are in pairs while the weft is single ply. This gives just double the strength in the warp direction. The tensile strength dry was 75 pounds to the inch lengthwise and 37 crosswise. After wetting out, these tests fell to 59 and 26 pounds, which recovered after drying 72 and 33 pounds, showing that by careful handling in washing and avoiding rubbing, such paper cloth will stand considerable handling. The two-piece suit weighed 3 1/4 pounds and gave the impression of weightiness. The weave was open, making a porous cloth which was very stiff. The cloth was a navy blue and the garments were cut out, sewed and finished in places with strips of cotton cloth in the ordinary fashion.

I confess I was much disappointed in the paper suit so called. I had imagined that a suit of clothes made of real paper had been produced. I believe it is perfectly possible to make a better article of clothing from paper pure and simple. Starting with a good strong rope, linen or kraft paper and treating it to the incipient parcellizing process and thereafter softening it produces a product of great strength and tenacity and resistance to wear. From an artistic point of view a smooth surface to clothing such as paper presents would not be attractive but it would be a very easy matter to give it a "linen finish" or any other surface treatment desired. The crimping effect on paper has enhanced the utility and value of paper greatly for certain purposes and is applicable to this purpose for giving pliability stretch and other desirable qualities.

If the time should come when such clothing appeared desirable for palm-beach suits which could be worn, smart and natty, for a day for half a dollar and then cast off, avoiding the laundry bill, I feel sure the American papermaker is the man who will do it without any assistance from the textile man and needs no pointers from Germany.

### TO MAKE PHOTOGRAPHIC PAPER AT EDMONT, OHIO.

A report from Dayton, Ohio, is to the effect that sensitized photographic paper will be one of the chief products of the Dayton Photo Products Company, organized here recently and capitalized at \$3,200,000. The company owns an invention which includes a convertible motion picture camera for home use, capable of taking, printing and projecting motion pictures by reflection with a non-combustible film. A special feature of the production of the machine is the sensitized photographic paper which will be manufactured at the company's plant, located in Edgemont.

**U. S. PRODUCTION OF NEWS PRINT IN OCTOBER.**

The following is a review of the reports received from domestic manufacturers of news print paper, from jobbers buying and selling news print paper and from leading publishers using news print paper by the Federal Trade Commission's report.

The average or normal production of total print and standard news based upon the total combined production for the years 1917, 1918 and 1919 amounted to 112,736 tons of total print and 101,400 tons of standard news for a period corresponding to October. The actual production amounted to 124,818 tons of total print and 114,232 tons of standard news, an increase in the case of total print of less than 11 per cent over the average for the three-year period and an increase in the case of standard news of less than 13 per cent over the average.

The production of news print for October, 1920, compared with October, 1919, shows a slight decrease for total print and an increase for standard news. The increase for October, 1920, over October, 1918, amounted to 18 per cent for total print and 21 per cent for standard news.

Mill stocks of both total print and standard news decreased during October, 1920.

The idle machine time, 2,186 machine hours, reported to the commission was 923 hours more than that in September. No lost time due to labor conditions was reported by news print mills.

**Imports and Exports.**

The imports and exports of printing paper not dutiable (practically all news print) and of wood pulp for the month of September, 1920, compared with the month of September, 1919, were as follows.

	Sept. 1920	Sept. 1919
	Net Tons	Net Tons
Imports of news print (total) . . . . .	65,411	46,571
From Canada . . . . .	63,321	46,574
From Germany . . . . .	676	.....
From Sweden . . . . .	1,414	.....
Exports of news print (total) . . . . .	3,182	4,703
To Argentina . . . . .	1,334	901
To Cuba . . . . .	658	1,031
To China . . . . .	102	192
To Uruguay . . . . .	173	98
To other countries . . . . .	915	2,481
Imports of ground wood pulp (total) . . . . .	26,812	18,593
Imports of chemical wood pulp (total) . . . . .	74,614	43,973
Unbleached sulphite . . . . .	40,422	24,294
Bleached sulphite . . . . .	12,529	7,055
Unbleached sulphate . . . . .	20,711	11,932
Bleached sulphate . . . . .	952	692
Exports of domestic wood pulp . . . . .	1,757	4,081

The imports of news print for September, 1920, were 18,837 tons more than for September, 1919. The export for September, 1920, were 1,521 tons less than for September, 1919.

The tonnage to "Other Countries" under the "Exports of News Print" for September, 1920, includes 135 tons to Canada, 113 tons to Venezuela, 110 tons to Chile, 109 tons to Dutch East Indies, 72 tons to Philippine Islands and 32 tons to Panama.

The imports of ground wood pulp for September, 1920, were 8,219 tons more than for September, 1919. The exports of domestic wood pulp were 2,324 tons less than for September, 1919.

Stocks of rolls in the hands of jobbers at the end of October were 88 tons less than the stocks in the hands of the same jobbers at the beginning of the month. Stocks of sheets were 323 tons greater at the end of October than at the beginning of the month. The net increase in the total stocks of news print in the hands of jobbers at the end of October amounted to 235 tons.

Commitments to sell roll news were 670 tons greater than commitments to buy. Commitments to sell sheet news were 906 tons less than commitments to buy. Total commitments to sell both rolls and sheets were 236 tons less than commitments to buy.

Publishers' stock decreased 1,646 tons during the month. The average daily tonnage used during October was 726 tons more than the average used in September. Seventy five publishing concerns held about 65 per cent of the tonnage on hand at the end of the month.

The domestic consumption of standard news by metropolitan dailies using between one-half and three-fourths of a million tons annually for October, 1920, when, compared with October, 1919, shows that the consumption for the month of October for both years was approximately the same, and increased slightly more than 35 per cent for October, 1920, over October, 1918.

**Average Prices Paid by Publishers.**

The weighted average price of contract deliveries from domestic mills to publishers during October, 1920, f.o.b. mill in earload lots for standard news in rolls, was \$5,790 per 100 pounds. This weighted average is based upon October deliveries of about 14,000 tons on contracts involving a total tonnage of approximately 310,000 tons of undelivered paper manufactured in the United States.

The weighted average contract price based on deliveries from Canadian mills of about 21,000 tons of standard roll news in earload lots, f.o.b. mill in October, 1920, was \$5,343 per 100 pounds. This weighted average is based upon the October deliveries on contracts involving about 100,000 tons of undelivered Canadian paper. The greater number of these are short term contracts expiring before 1921.

The weighted average market price for October of standard roll news in earload lots f.o.b. mill based upon domestic purchases, totalling slightly less than 8,000 tons, was \$9,362 to 100 pounds. This weighted average may be less than market quotations on account of contract relations, quantity discounts, mill stock ownership and other causes unknown to the commission.

**ARNOLD HANSSON'S PROMOTION.**

Mr. Arnold Hansson, a well-known Canadian Forester has received the appointment of Chief Forest Inspector of the New Zealand Forestry Department, under Mr. M. L. Ellis, formerly of the Forestry Department of the Canadian Railway.

Mr. Hansson is a Norwegian by birth, but some time ago became a British subject. He received his B.A. and F. E. degrees from Christiana University, Norway, and Master of Forestry from Yale University. He has extended experience in forest work throughout the United States and in Canada. After several years with the Laurentide Company at Grand Mere, Quebec, Mr. Hansson entered into private work as a consulting forest engineer with headquarters at Montreal. In this capacity he was retained by the Abitibi Power and Paper Company to conduct special work in connection with their forests. An excellent war record with the Canadian forces is another of Mr. Hansson's distinctions; two years he spent in active service.

# A Canadian Forester's Training

The Final Two Years of His College Course Treat the Forest as a Productive Organization.

By Dr. C. D. HOWE, Acting Dean, Faculty of Forestry, University of Toronto.

(Continued from Page 1165, Nov. 11, 1920.)

For the first two years of a course in forestry, the student for the most part considers trees separately as individual organizations, but in the second two years he is taught to look upon trees, both in regard to their life history and their economic relations, collectively as stands, types, forests. Just as the town is not merely an organization of people, so the forest is not merely a collection of trees, but like the town is a community, an organization dependent for its development and growth upon certain external conditions and upon certain internal conditions of its own making. Indeed, the simile may go a step farther, for in a town the organization, the structure remains intact, but the component individuals are constantly changing, and so it is with the forest; the forest is always a forest, unless destroyed by some catastrophe—but the individuals are slowly but constantly shifting in time and in space. Because men can comprehend the laws and conditions which bring about these changes in the forest, we have the profession of forestry, since forestry is the fashioning, the moulding of a community of living trees to the needs of man, the application of brain power to the economic production of wood. Man has already applied his intelligence to the energy of lightning and falling water and directed it into economic channels, resulting in enormously increased wealth so man can apply his intelligence to the energy of nature as expressed in the growing forest and direct it into economic channels, and it would result in enormously increased wealth for our country. The possibilities in Canada are almost unlimited, and the results would be glorious—and profitable.

## Science in Forest Control.

This is the point of view in regard to the forest presented to the students during the last two years of their course, and they are shown in the forest as well as in the class room how man can control and improve the forest by his knowledge of the laws of its growth, health and hygiene. For example, in reference to these laws, the students are taught how a forest cover influences the amount of light that gets through to the ground, how some trees can grow in the shade of their neighbors and others cannot. In fact, the light relation is the most important factor in determining the composition of a forest, and it is the forester's most effective tool. The students are also introduced to the mysterious cycle of forest growth and soil fertility. The forest feeds the soil by the decay of its leaves and wood. The products of decay of one year or a group of years contribute to the support of the forest life of the following year or group of years. The previous generation gives up its life that the present generation may live.

## Soil and Light Factors.

Light and soil fertility then are the magic keys that unlock the secret chamber wherein is contained the knowledge which man uses to fashion the forest to his wishes. The equipoise between light exposure and soil

fertility on one side and forest growth on the other is extremely delicate. Minor disturbances and adjustments are constantly taking place under natural conditions, but the balance suffers great distortion under the usual logging operations and still more in the case of fire. This explains why the character of the forest usually changes and may pass through several stages occupying several hundred years before the original forest comes back after severe cutting operations and especially after fires, and this is the fundamental reason that logging operations must be directed with intelligence and technical knowledge if our forests are to be kept continuously productive in terms of valuable species, and the reason, too, that adequate fire protection is absolutely essential to any plans for continuous supply of timber.

## Woods Experience.

In the third year also especial attention is given to the economic and industrial aspects of the forests, in particular the methods of converting the forests of the country into current wealth. The various steps in the creation of wealth by the application of labor to the forest resources are followed from the cutting of the tree to the production of paper or of a shoe last, or whatever the final product may be. Forest labor is discussed, its character, length of employment and methods of payment, together with workman's compensation acts. The students come in contact with the tools commonly used in bushwork. The advantages of the various types of axes and saws are demonstrated by actual use. The methods of felling and log-making and the organization of crews are studied in contact with such work. The organization and equipment of a logging camp are explained and later the students learn to appreciate certain characteristics of the average bunkhouse by living in one for several weeks. The students learn how logdecks are made and how the logs are taken down to the landings for transport by rail or water. They learn the relative costs and advantages of aerial tramways, forest railroads, river driving and rafting and the applicability of the various types of transport to the mill to the different forest regions of the country.

## Learning the Markets.

The methods of manufacture and use of the various forest products follow the above as a natural sequence. Here the object is not only to give the forestry student an intimate knowledge of the final markets and uses of Canadian woods, but also to give him an understanding of the various factors that enter into the cost of production. The students are required to visit and make reports upon the organization, equipment and production of saw mills, the grading and piling of lumber, upon the manufacture of cross ties, poles, posts and piling, of flooring and siding, shingles and laths; upon the production of cooperage, veneers, boxes, matches, excelsior and various wooden-ware products. They are required to give special study to the rapidly developing wood pulp and paper industry. The pro-



cesses of manufacture of mechanical and chemical pulp and their conversion into various grades of paper are studied in detail.

#### The Function of Forestry.

Unless the tearing down processes are equalled or exceeded in volume by the building up processes, life will cease, and so it is with the forest unless wood material equivalent in amount to the enormous quantities removed each year in the form of lumber and plupwood, is replaced each year by new growth, the forest will cease—at least as a commercial asset. To recuperate, to regenerate, to restore is the function of the forester. His greatest and most important work is through intelligent direction of cutting and logging operations to replace the annual loss through the agency of the axe and disease, windfall and fire in the forests which nature has already created free of charge. A part of his work, however, is to create forests anew on worn out farm lands and on areas where forests have been completely destroyed by repeated fires. Forestry students are thoroughly prepared for this kind of work. They learn about the adaptability of different species for planting under the different climatic and soil conditions in the various parts of the country. They are taught methods of preparing the nursery, raising and caring for the young trees. They learn the different practices in field planting. At the completion of the subject, their book knowledge is reinforced by a week or ten days of actual work in the Ontario provincial nurseries.

(To be continued.)

#### PRICES.

"They say the bottom has dropped out of commodity prices."

"Yes and no," says the organ of the Parsons Trading Company.

High prices induce greater production, and the greater production tends to lower prices, and this desirable effect is noticed first in those things where it takes least time to increase production—the annual crops, and goods made from them. There is no question that the "fantastically high" prices for food and for clothing fibres—wool, cotton, etc. persuaded many planters and stockmen to go in more heavily on those lines. They overdid it a bit, seen from their view point, for old crop stocks were not exhausted, and prices fell.

The world is sobering after the long "spree" of spending. The persistent frugality of some thousands, the renewed economies of some millions, have at last allowed demand in many lines to be overtaken by supply, and prices drop.

It is said most of the war-rich have spent their money, and that it is getting back into thrifter hands. The merchants must sell, and if the monthly sales, say, of a mail order house drop from \$27,000,000 to \$16,000,000, the answer is a 25% horizontal cut. An ominous condition, a drastic remedy.

But it is clear that any deep horizontal cut affects, temporarily, the prices for all other obtainable goods, but that horizontal cuts cannot be kept horizontal, and each commodity in the long run must find its own price level.

When the tide comes in the waves dash higher than high-tide level. When the tide goes out there is a sweep which leaves momentarily exposed patches of beach which are really below low-tide level. There is a tremendous sweep, and sometimes people think the

tide will ebb indefinitely; but there is a limit and a turn.

As long as there are stomachs to feed and backs to clothe, there will be little over-production in annual crops, one year's surplus being merely the next year's insurance against shortage.

With housing and the lumber trades, which require longer time for their products, relief cannot come so promptly. If it takes thirty years to grow a tree fit for pulp-wood, and the forests have been wantonly depleted, prices will drop to permanent lower levels only gradually. Sudden sharp breaks, due to temporary and technical conditions, will be followed by quick recoveries.

In paper, one of the most important trades dependent on timber, the general commodity price movement, and the new wage demands of printers, have alarmed some buyers, and for the moment certain grades are more easily obtainable than heretofore. But price shading has been limited chiefly to spot lots of odd sizes and weights; future contracts are strong. Nobody wishes to go through another winter like 1919-1920.

Paper prices will come down, though not to pre-war levels. Meanwhile it is safer to have the paper one needs, at a fair market price, than to wish for it, and lack it, at a price which economic conditions do not yet permit.

#### WOODLANDS SECTION MEETS NEXT WEEK.

The necessity of holding a meeting of the Woodlands Section of the C. P. and P. A. has prevented giving it very much publicity. From the following it will be evident that much of importance will be done in Toronto. The live ones will be there.

Program of Woodlands Section meeting Dec. 8th and 9th, 1920, King Edward Hotel, Toronto.

##### Program for Dec. 8th.

10 o'clock.—Chairman's address; Paper by Dr. C. D. Howe, University of Toronto, entitled "Performance of a Few Celled Acres"; General discussion; Report by Edwood Wilson, of Imperial Forestry Conference; Adjournment for lunch.

Afternoon.—Paper by R. O. Swezey, on the comparisons between planting, seeding, and natural growth; Paper by Mr. H. Graeslund, who will tell what is being done in Sweden in regard to forest policy.

##### Program for Dec. 9th.

Thursday, the 9th will be an open meeting commencing at 10 o'clock and, during the day, opportunity will be given to look over different mechanical appliances which will be on exhibition by the manufacturers.

10 o'clock.—Open discussion on use of aerial appliances.

The Laurentide and Price Companies will contribute much useful data.

#### SPANISH RIVER PLANS ADJUSTABLE CONTACT

Reports that the Spanish River Pulp & Paper Company had set its 1921 price at 6.50 were current in New York last week, but the G. H. Mead Company, which sells this company's products in the United States, said that next year's newsprint price had not yet been set. It was stated in the Mead company's telegram that the 1921 contract will probably provide for adjustment of price on July 1 and that the Mead company had closed some contracts extending beyond the end of 1921, providing for adjustment of price.

## THE FUTURE OF TIMBERLANDS. PULP AND PAPER.

No one should be deceived by the present lull in business in so far as pulp and paper are concerned, as this particular line is in a class by itself and any decline in price will be very transitory as this industry differs from any other, owing to the short supply of wood, its raw material, which will be the price controlling factor for the future.

There are so many paper companies who own either no lands at all or very small holdings who will be forced out of business on that account, that there will be a continued shortage of pulp and paper from the time business once takes on its normal stride, which in all probability will be not later than next March.

The foregoing statements apply with equal force to the lumber situation, and as soon as building begins next spring prices for lumber will be higher than have yet obtained.

Within two years timber lands will be selling in the State of Maine, for instance, for fifty dollars per acre. I am willing to stake my reputation on this, and I shall leave it to my friends to state whether or not my predictions in the past in connection with timber lands have been correct.

When one considers that land in Maine has already sold for thirty dollars and more per acre, and stumpage contracts have already been made at prices running up to nine dollars and fifty cents per cord, it is not a very far cry to fifty-dollar land and thirteen-dollar stumpage.

Within two years there will be little, if any, wood going out of Canada, and I shall leave the reader to imagine what will happen when this annual supply of a million and a half cords is no longer available to the American mills.

This will be simply a case of self preservation on the part of Canada, as her own mills have absolutely no wood to spare. The Province of Quebec has already been forced to notify some of her large limit-holders that they must reduce the cut on their Crown Lands one-half. This will necessitate the purchasing by the Canadian mills of all fee land wood which has been going across the line; otherwise they will be prematurely forced out of business themselves.

Personally, I will not sell an acre of land a cord of stumpage, or a cord of wood at any price. This is the advice which I have given all of my friends for the past year. I am not cutting a cord of wood on my own holdings, but am buying wood and stumpage, and have stocked my mills for the coming year in this way.

The facts above stated are all indicative of our only too short timber supply, and further emphasize the necessity of practicing greater conservation.

A word further to the paper mills. Don't be deceived by a present supply of wood in the mill yard and at the railroad sidings, as every cord of extra wood at this year means a cord less standing.

In the wood we are now cutting we are simply robbing our children.

The present accumulation of cut pulp wood has been brought about by the four following causes:

1. A temporary recession in business during the readjustment period, which was bound to come.
2. The increase in price for wood, which helped to pay for the longer haul, as much of the wood that has been cut recently is from the very back end of many of our timber lots.
3. An attempt on the part of land owners in the

bad worm killed area to salvage at least a small portion of the bug killed timber.

4. The fact that lumber has temporarily dropped in price, owing to the delay in building, causing a diversion of logs from lumber to pulp wood.

The great trouble with the paper companies is that they are always living in the present, forgetting the past when at times they have hardly known where the next carload of wood was to come from, and disregarding the larger and more permanent shortage of the future.

The latest reports which I have just received from cruisers in New Brunswick now raise the amount of loss in the standing wood supply of that Province from the recent attack of the bud worm to approximately fifty per cent., so when you look at the present pile don't lose sight of any of the above facts.

It is far better to look this situation squarely in the face and endeavor by every means at our command to prepare for the future. Therefore, anything that can be said or done which will tend to arouse the public to a realization of the danger that is confronting us with regard to our future timber supply is a public work of the first importance.

FRANK J. D. BARNJUM.

Annapolis Royal, Nova Scotia.

November 27, 1920

Note:—We happen to know that Mr. Barnjum is ready to practice what he preaches—cut dead trees out, whether or not the Government requires it.—Editor.

## GERMANY'S PAPER BOOM.

Information reached London today that a great boom in Germany's export trade in paper is impending. Production is rapidly rising in the "Fatherland" and has now attained 75 per cent of peace-time quantities and far exceeds the home demand.

The cause of the present abundance of paper for report is that nearly all German newspapers and publications have reduced their sizes. Newspaper publishers are agitating for cheaper newsprint, which, besides increasing the home demand will also increase the tendency to dump abroad. In 1919-20 the Bavarian State profits from the sale of timber amounted to 5,000,000 marks, as against 19,000,000 marks in the preceding year. Germany's capacity as paper manufacturer is said to be 30 per cent greater than in 1914. One cause of this increase is that makers of wall-papers, whose business has been stagnated by domestic troubles, have taken to making newsprint.

Improved paper-making machines are now being manufactured at Kripps. The complete solution of the fuel problem is likely to see Germany restored to her pre-war position as Europe's greatest paper exporter.

From the fore-going information, which is partly correct it is quite evident that Germany is working out the coal problem for the benefit of industry. We do know that large shipments of newsprint have reached England and the States and that a great effort is now being made for Germany to get back to her pre-war status.

Mr. H. Furringer, superintendent of the Beauharnois Division of the Howard Smith Paper Company, and Mr. Wesley Tilton, superintendent of the Cornwall Division, called on the Toronto office of the company during the week.

**3000 CUTTING ABITIBI'S PULPWOOD.**

The work of the Woods department is of especial interest at this time though there is a romance about the bush that makes it always an interesting subject. The sailor is not a more romantic figure than the man who goes into the silent places to reap the harvest of timber.

On the Abitibi limits this season there are eight company camps in full swing, with nineteen jobbers and innumerable sub-jobbers taking out anywhere from 2,500 cords to 55,000 cords. This means that the woods resound to the axes and saws of over 3000 men from dawn to dark.

But this is not the only source of supply of wood for the Mill. All over the country within range of the mill, are settlers busy clearing off their land and selling the timber to the Company. Naturally this is in small lots from each clearing, but in the aggregate it comes to a large number of cords when it is assembled.

The cut this year is likely to go to the objective or even surpass it for the weather has been extremely favorable. A long dry fall without snow is ideal for logging especially if it follows a dry summer. In that case the black spruce swamps have not so much water in them and if they freeze before the snow comes in quantity, it is possible to get out many more logs than otherwise.

Most of the work in the bush starts in the middle of August; all the big camps are opened then. In fact the season has been so propitious that many of the big jobbers have got on so well with the actual cutting operations that they are a week or two ahead of what they would have been in a usual year. They expect to be finished with the cutting by mid-January. Others who got a later start will not be through by that time but the prospects as said above are for a record cut on account of the weather.

The two big new camps opened this year are Camp 28 on the Mistango river and Camp 30 on the first lake of the Edwards chain. Frank Boyer, who used to be on the boom at the Mill, is in charge of Camp 30.

The depots at Lowbush and La Reine on a Sunday look like a county fair. The yards are crowded with the teams of those who have driven in with supplies, men in all sorts of costumes and seeking every kind of thing imaginable. An indication of the traffic through a depot is shown by the fact that sometimes 700 meals are served to people coming to a depot during a month.

**THE STRENGTH OF TREES.**

Few people have any idea of the strength of trees. In Boston, Mass., recently, an old elm, more than three feet in diameter, had to be removed from the common. Several of its limbs had been struck off by lightning, and it was supposed to be in a dangerous condition. So one of the tree-levelling devices used in France for tearing down buildings, trees, etc., was brought into play. This is a machine that is worked by a couple of men moving a lever back and forth. A cable was fastened to the tree trunk, and it should have come up by the roots, all theory being correct. Instead, it broke the first cable of steel—one inch thick—and then, when two were wound around that old trunk, the tree shivered a bit and broke them. The contractor gave it up as a bad job, and put several men on with axes to cut the roots.

**PULP AND PAPER EXPORTS UP 34 PER CENT.**

Canadian pulp and paper exports during October reached a total value of \$16,706,005, compared with \$11,863,578 for the corresponding month last year, a gain of \$4,842,427. They were made up as follows:

	October	1919	1920	Gain
Paper . . . . .		\$5,954,916	\$8,128,254	\$2,173,338
Chem. pulp . . . . .		3,965,946	6,590,944	2,624,998
Mech. pulp . . . . .		1,942,716	1,986,807	44,097
Totals . . . . .		\$11,863,578	\$16,706,005	\$4,842,427

The paper exports included 4,411 cwts. of book paper, valued at \$43,802; 1,288,089 cwts. of newsprint, valued at \$6,915,294, and other paper valued at \$1,169,158.

Pulp exports included 279,000 cwts. of sulphate, valued at \$1,827,448; 208,620 cwts. of bleached sulphite, valued at \$1,963,401; 402,565 cwts. of unbleached sulphite, valued at \$2,800,095, and 536,329 cwts. of ground wood, valued at \$1,986,807.

The countries of destination were: Paper—United Kingdom, \$408,482; United States, \$6,167,488; other countries, \$1,552,284. Pulp—United Kingdom, \$583,343; United States, \$7,447,528; other countries, \$546,880.

There were 124,390 cords of pulpwood valued at \$1,752,923 exported during the month, compared with 36,399 cords, valued at \$596,186, during October a year ago, all of which went to the United States.

For the first seven months of the fiscal year, April to October inclusive, pulp and paper exports amounted in value to \$103,949,181, compared with \$55,609,550 in 1919, and \$46,799,134 in 1918, a gain of \$48,339,931 over 1919, and of \$57,150,347 over 1918. They were only \$685,857 less than the total exports for the fiscal year ending March 31st last. They were made up as follows:

	Seven months.	1918	1919	1920
Paper . . . . .		\$25,073,415	\$33,074,162	\$51,154,018
Chem. pulp . . . . .		18,817,444	17,974,334	10,170,498
Mech. pulp . . . . .		2,908,275	4,561,054	12,624,965
Totals . . . . .		\$46,799,134	\$55,609,550	\$103,949,481

Exports of pulpwood for the seven months amounted to 778,246 cords, valued at \$9,556,255, compared with 571,843 cords, valued at \$5,686,179 in the corresponding period in 1919, and 1,047,748 cords, valued at \$9,980,535, in 1918.

**DUTCH LIFT PAPER EXPORT EMBARGO.**

The Netherlands Minister for Agriculture, Industry and Commerce, announces that the decision of 5th January last which re-imposed, with certain exceptions, the export prohibition on paper, has now been repealed, and that paper of all kinds may, as from 12th October, and until further notice, be exported from the Netherlands without the necessity of obtaining an export license. This relaxation does not, however, apply to old paper and waste paper.

**DOZED ON MILL BELT.**

Adrien Gauthier, 18, of St. Marguerite, Que., died in the hospital at North Bay, last week, as a result of an accident at Sturgeon Falls. Gauthier had crept on one of the broad belts of the milling machinery and had fallen asleep. One of the workmen started the machinery and the young victim was drawn in, his leg being crushed. Medical assistance was summoned but Gauthier succumbed to his injuries.

## ABITIBI PULP AND PAPER CLASSES STARTED.

The technical classes on pulp and paper making were started at Iroquois Falls, Ont., Monday Nov. 15, under very auspicious circumstances. The attendance was good at all three classes, during the week, and everyone took great interest in the opening of the courses in Wood Technology and in Acid Making. After the opening lectures those who attended talked enthusiastically over the outlook for a very interesting and very instructive course throughout the winter.

A gauge of the interest taken is that of the three classes in Wood Technology the attendance at the two which have been held was Monday 5.15—36; 7.00—62.

The first lecture on Acid Making was given Wednesday evening and again the attendance was good and their interest shown insures the success of the course. There were twenty-three at this class.

### The Opening Classes.

At the opening of the class in the afternoon, which is chiefly for those working days to whom the afternoon class leaves a clear evening, R. W. Hovey spoke a few words in explanation of the course before Clarke Davis gave his lecture on Wood Technology.

### An Elaborate Course.

At the evening meeting, Monday, R. A. McInnis opened the proceedings by stating that these courses were got up entirely for the men. He had an opportunity of looking over some of the lectures and he could assure his hearers that they were the most elaborate and complete treatment of the newsprint manufacture so far developed. It was only fair to the men who have spent so much time on the preparation of the courses to say this. Some of these men had given up practically all their spare time since last April to the preparation of the data.

To get results two things were necessary:

First.—That those taking the courses realize their value to themselves;

Second.—They must attend regularly, irregular attendance meant a miss-fire. They would get dabs at it but not the whole story.

The results you will get from these courses will be of great value to you and that will amply repay the men who give the courses for their time and labor.

### The First Lecture.

Clarke Davis of the Forestry Department gave the preliminary lecture on Wood Technology in a well-balanced combination of technical and popular treatment. It was of a preliminary nature and he ended just as the subject was leading to the direct study of the woods which are of special interest to the paper or pulp maker.

### First Acid Making Class.

The first of the acid making classes was on Wednesday evening when R. W. Hovey gave the general divisions of the course which will include a general outline of the process, raw materials, sulphur dioxide production, the cooling of the gas, the absorption of the gasses to form bisulphite, the recovery system, and tests.

He gave an outline of the process from the burning sulphur to the finished acid and an explanation of the analysis of the acid and discussed the meaning of total, free and combined acid.

In regard to the raw materials he dealt with pyrites, sulphur, limestone and lime in relation to their prop-

erties used in the acid making process.

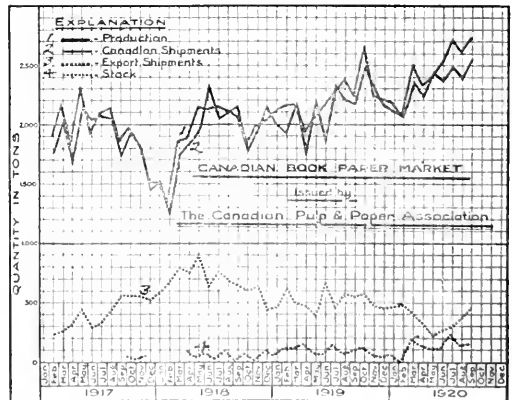
He then took up the burning of the sulphur, describing the various methods of supplying sulphur to the burners and the theory of what takes place in the burners.

### All May Attend Classes.

The committee wishes it thoroughly understood that all may join the classes. Everyone will be welcomed, and accommodation arranged for in one or another of the classes. Owing to the numbers attending the classes it was necessary to divide the classes into three. The natural division was to make an afternoon class as so many of those who wished to take the courses quit at five o'clock. A class was accordingly made to take in a good portion of those who finished their day at 5.00 p.m. and thus give their evenings free. The other classes are especially for the shift men, and are Monday and Wednesday at 7.00 sharp.

It might be well to emphasize again that anyone taking the classes every Monday night or every Wednesday night, will get the complete course. In the case of shift workers, on the 4 to 12 shift they will not be able to attend that week but the following week by attending Monday and Wednesday both, they will catch up for the week they were unable to attend and will then go on as before with Monday courses or Wednesday courses.

### Where Canadian Book Paper Goes.



This curve was outlined from the discussion of the tariff on paper, in last week's issue. It shows that almost all the book papers made in Canada were sold in this country. This was done in spite of many attractive offers of foreign trade.

### HOW TO SAVE MONEY.

Wife (at breakfast): "Could I have a little money for shopping to-day, dear?"

Husband: "Certainly. Would you rather have an old five or a new one?"

Wife: "A new one, of course."

Husband: "Here's the one—and I'm four dollars to the good!" —Stray Shots.

Edison may be a great inventor, but he hasn't discovered a way to make a pair of pants last as long as a vest.

# British Trade News

(From Our London Correspondent).

London, Nov. 16, 1920.—Excellent results are shown by the preliminary financial statement of Wall Paper Manufacturers, Ltd., for the year ending August last. It may be recalled that the Deferred capital came off the "Waiting list" in 1918 and received 5 per cent.; that rate being also distributed for 1919. The profit, after providing for Excess Profits Duty, etc., was £751,887, compared with £336,614 for the previous twelve months (then postponed repairs had to be allowed for, but to what extent was not stated). The Deferred shares are now receiving 10 per cent and a bonus of 2½ per cent; the transfer to contingencies fund is nearly doubled at \$65,000, and the sum carried forward is something over £20,000 more at £181,054. In June last the deferred capital was increased by the capitalisation of profits, and £641,000 bonus shares were issued to deferred shareholders in the proportion of one to two.

Major Barnes, in the House of Commons, has asked if he could direct the Central Committee on Trusts to undertake an investigation into the effects of trade associations in the printing and paper trades. Sir Robert Horne says that if Major Barnes will send him any information he may have relative to such associations he will forward it to the Central Committee for consideration. The Standing Committee on Prices of the Central Committee established under the Profiteering Acts have already under consideration the question of instituting an inquiry into prices, costs, and profits in connection with printing paper.

In a London public auction room, the other day, an auctioneer put up for sale various quantities of papers and the prices realised were interesting. This is an unusual way of disposing of paper. Here are the results:—

Ten bundles of brown kraft 29½ in. x 45 in., each bundle 58 lbs., weight—£11.

Eight similar lots—£9, 10s., to £10, 10s.

Four bales of white tissue, each containing 40 reams 20 in. x 30 in., each bale weighing 2½ cwt.—£26.

White printing paper of 21 lots 35-in. x 45-in., weight per bale 102 lbs., each lot consisting of 10 bales. Five lots realised £11, 11s. each, 14 lots £11, 10s. 6d. and two lots £12, 12s. A lot of 3 bales went for £3.

Other small quantities were disposed of, but the prices realised were just as much interesting as the sale itself. Some of the buyers got very good bargains, particularly in M. G. printing paper which was lying in one of the warehouses at the Docks.

## Pulp Supplies.

The supplies of groundwood from Canada during October have been somewhat disappointing and the figures for the ten months are much below those of last year. For comparison I will quote the supplies in tons received from all countries:—

	Jan. to October 1919	Jan. to October 1920	Jan. to October 1919	Jan. to October 1920
Sweden . . . . .	7,757	8,116	76,876	77,496
Norway . . . . .	17,587	17,879	246,790	263,937
Canada . . . . .	28,928	16,176	81,814	73,001
Other countries . . . . .	.....	.....	16,600	25,006

From these figures one can see Sweden and Norway have got a good share of what went to Canada last year. Norway's position in the ten months trading has

greatly improved notwithstanding all the labor troubles and set-backs the pulp producers had to endure since the beginning of the year.

## What Newsprint Does.

Messrs. Thomas Owen & Co., Ltd., Cardiff, have paid an interim dividend at the rate of 15 per cent per annum, free of tax, on the ordinary shares for a half-year. They are big producers of newsprint.

## Total Pulp Imports.

The imports of pulps from all countries, which are considerably below those of the past three years, are given as follows by the Trade Board:

	Tons.		Tons.	
	Oct. 1919	Oct. 1920	Oct. 1919	Oct. 1920
Bleached chemical . . . . .	1,404	2,545	£ 50,443	£ 175,743
Unbleached chemical . . . . .	41,507	35,485	1,000,453	1,495,593
Chemical, wet . . . . .	.....	1,000	.....	17,500
Groundwood, dry . . . . .	805	1,146	13,388	30,626
Groundwood moist . . . . .	52,276	48,791	474,565	780,171

For 10 months trading the enormous sum of £24,369,029 has been spent on pulps of all kinds and not £3,000,000 has Canada received out of the huge total—the balance going to the Scandinavians.

## Bleached Sulphite.

Bleached sulphite is supplied to the British paper-maker from the following countries:—

	Jan'y Oct	Tons.	£
Finland . . . . .	.....	231	21,095
Sweden . . . . .	.....	4,011	213,256
Norway . . . . .	.....	14,273	652,187
Germany . . . . .	.....	525	24,002
Other countries . . . . .	.....	5,450	287,078

For the first time Finland appears in the returns with 231 tons valued at £21,095. Norwegian supplies have more than doubled, but Swedish shipments are lagging.

## Paper Exports to Canada.

Canada imported from the British paper mills during October the following papers: Printing paper, fine, 763 cwt., value £3,322; writing paper, fine, 17 cwt., value £240; other makes, 106 cwt., £2,409.

The exports of the British paper mills show a considerable increase over pre-war days as the following figures depict for October last:—

	1913	1920
Writing paper . . . . . cwt.	21,296	29,381
Printing paper . . . . . cwt.	128,456	128,933
Other makes . . . . . cwt.	6,275	8,192

## Canadian Newsprint.

Canadian newsprint is reported to be offered to buyers lately. There are also great quantities of New foundland paper being used. One cannot help but notice the difference in many of the newspapers that use paper from these sources.

## Notelets.

A few days ago Mr. W. Raitt, cellulose expert to the Indian government sailed for home. Before doing so he arranged for an experimental pulp factory for the Imperial Forest Research Institute to send out for construction. It is hoped to deliver the machinery next year about February or March.

Mr. Harry B. Coates, Turner Paper Mill, Yorks, has won the Papermakers Association gold medal in the City and Guilds of London Institute examination in paper technology. He is self-taught.



# Technical Section



## NEW MEMBER.

The latest addition to the membership of the steadily growing Technical Section is R. A. McInnis, who has been elected an associate member. Mr. McInnis is mill manager of the Abitibi Company, at Iroquois Falls, Ont., and has always taken a keen interest in the Section and supported its aims.

## REVIEW OF RECENT LITERATURE.

**A-1 Lignin: its composition and reactions.** PETER KLASON. Translated by Paul Bartholow. Paper, 20, 36, 38, (June 30, 1920). A description of various reactions of lignin and lignosulfonic acid, showing that lignin must contain the acrolein complex R.CH:CH.CHO, and showing its relationship to vanillin, coniferyl alcohol, coniferyl aldehyde, and cinnamic aldehyde.—A.P.C.

**A-1 Acetyl content of wood.** H. PRINGSHEIM and H. MAGNUS. Z. angew. Chem., **33**, 56, (1920); J. Soc. Chem. Ind. **39**, 263A, (1920). The authors reply to a criticism by Schwalbe and Becker (J. Soc. Chem. Ind., **39**, 185, 1920) of their previous communication regarding the respective amts. of acetic acid obtained from pine woods and wood from deciduous trees. Beechwood lignin contains 37.8% acetyl as against 19.85% in pine wood lignin. Boiling the wood for 3 hrs. with 2.5% H<sub>2</sub>SO<sub>4</sub> is not sufficient to extract all the AcOH. It is necessary to treat the wood for 6 hrs. with 8 times its quantity of 3.5% NaOH under a press of 6 atmospheres.—A.P.C.

**A-1. Researches on lignin.** H. Potash fusion of the lignosulfonic acids. M. HONIG and W. FUCHS. Monatsh., **40**, 341-9, (1919); J. Soc. Chem. Ind., **39**, 330A, (1920). The removal of the sulfonic groups from the Ba salts previously described (see J. Soc. Chem. Ind. **37**, 502A, 1918) by fusion with KOH is only complete at 250-300°C. In each case protocatechuic acid was the only phenolic product obtained (Cf. Melander, J. Soc. Chem. Ind., **38**, 625A, 1919), the yield corresponding to 13.9% of the purely organic portion of the original material. The sulfonic acids are therefore complicated aromatic sulfonic acids, containing the C= skeleton of protocatechuic acid.—A.P.C.

**A-2; Deterioration of cotton on wet storage.** N. FLEMING and A. C. THAYSEN. Biochem. J., **14**, 258, (1920); J. Soc. Chem. Ind., **39**, 263A, (1920). Deterioration of damp cotton is brought about by a streptothrix and by a schizomycete, both of which cause a breaking down of the cuticle. Deterioration is retarded if the moisture content of the cotton is below 9%. The amt. of deteriorated cotton may be estimated microscopically by counting the fibers after the sample has been treated by Ball's viscose process.—A.P.C.

**A-3 Ramies and textile nettles as paper fiber.** CHARLES GROUD. Paper, **23**, 73, (April 1920); Paper, **15**, 6, 30, (July 7, 1920). Translation of article in Le Papier.—A.P.C.

**A-15; K-7 Cellulose mucilage.** C. G. SCHWALBE and E. BECKER. Z. angew. Chem., **33**, 57-8, (1920); J. Soc. Chem. Ind., **39**, 330A, (1920). The parchment ("pergamyn") cellulose mentioned in a previous paper (J. Soc. Chem. Ind., **38**, 585A, 1919; Paper, **25**, 875, 1920; Pulp & Paper, **18**, 497, 1920; J. Soc. Chem. Ind., **39**, 58A, 1920) had a high methyl value indicating that the treatment had left considerable quantities of lignin unattacked. The physical properties of a no. of cellulose mucilages were investigated; that from cotton wool was almost entirely free from fibers exhibiting structure, but some of the parchment cellulose mucilages contained fiber debris. In the case of mucilage prepared from soda or sulfite pulp by grinding in an edge runner, the Schopper-Riegler sieve apparatus is useless for determining the degree to which the fiber has been converted into mucilage, but the apparatus gave more trustworthy results with mucilage prepared by prolonged beating in the Hollander.—A.P.C.

**A-15; K-7 Cellulose mucilage.** Hygroscopic properties of paper containing mucilage. C. G. SCHWALBE and E. BECKER. Z. angew. Chem., **33**, 58-9, (1920); J. Soc. Chem. Ind., **39**, 330A, (1920). Parchment ("pergamyn") cellulose and parchmentised paper and similar products have a moisture content of 68% after exposure to the ordinary atmosphere, but after exposure from 4 hrs. in air saturated with water vapor the water content increased to 17-26%. Previous heating at 120°C decreased this property of absorbing water.—A.P.C. (See also article by Miner & Sieber, Pulp and Paper Magazine, Sept. 9, 1920).

**B-3. Does normal forest growth overcome natural destruction?** Paper, 21-2, (June 30, 1920). The forest destruction due to pests, wind, and fire are such as to more than outweigh the regular growth when considering a state or country as a whole. Added to this is the destruction due to timber cutting. The importance of tackling the problem immediately is evident.—A.P.C.

**B-9. Practical possibilities in Alaskan pulpwood lands.** Paper, 9, 26, (June 30, 1920). A discussion of the practicability of utilizing the pulpwood resources of Alaska.—A.P.C.

**A-16. Acid resistant bronzes for sulfite mills.** A. KLEIN. Wochbl. Papierfabr., **51**, no. 27, 1915-1916 (1920). The composition of the bronzes is discussed but nothing is said about their use.—C.J.W.

**E-2. Process for obtaining fat from sulfite-cellulose liquors by biological methods.** W. JEROCH, and Kriegsausschuss f. pflanzliche u. tierische Oele u. Fette, G. m. b. H. German Patent 305,091, Jan. 25, 1917. Aerated and neutralized sulfite liquors to which a nitrogenous substance, such as beet juice, has been added, and inoculated with a culture of *Endomyces vernalis*.—C.J.W.

**E-2. Apparatus for the evaporation of liquids, which are liable to burn, such as sulfite cellulose liquors.** C. TITTEL. German Patent 322,462, Nov. 17, 1917. Troughs, divided into small compartments by parallel cross partitions with openings alternately at opposite ends, are arranged side by side in step formation. Each is provided with an overflow and independently oper-

ated heating coils, so that any desired number of successive troughs can be put into operation as a single unit, and, if need be, the liquid in different stages of concentration in the individual troughs can also be handled separately. C.J.W.

**E-2. Utilization of sulfite waste liquors.** A. KLEIN. *Wochbl. Papierfabr.* 51, no. 26, 1840-1842 (1920); translated by Clarence J. West, *Pulp Paper Mag. Can.* (Oct. 14, 1920). A general review of the German literature during the period 1914-1919.—C.J.W.

**K-6. Straw; Utilization of the waste lyes from the alkaline digestion of—.** S. HERZBERG. G.P. 319,068, 13.11.17. Alkaline lyes from the treatment of straw are electrolysed to obtain the caustic soda in a concentration suitable for further use. The degree of evolution of oxygen or of oxidation of organic substances at the anode varies with the strength of the current.—J.S.

**K-6. Paper; Removal of ink from writing.** H. GETHE. C.P. 321, 545, 26.7.19. The paper is passed through four consecutive baths, of which the first and third contain oxalic acid, the second potassium permanganate, and the fourth aluminium sulphate; it is afterwards passed between hot rollers.—J.S.

**K-10. Paper, pulps, paper yarns and fabrics; Sizing and waterproofing of—.** E. FUES and E. BRAUN-MULLER. G. P. 318,923, 3.1.17. The paper material is treated with colloids such as dialysed solutions of hydroxides of trivalent metals, preferably iron or chromium, with or without the addition of solutions of other, preferably organic colloids.—J.S.

**R-5. Polish paper conditions.** Paper, 18-9, (June 30, 1920). Seizure of machinery by the Germans and Russians, and lack of raw materials during the post-war period hampers the Polish papermakers, so that production is much reduced and exports low. A. P.C.

**R-12. How the cost accountant works in the paper industry.** John Paleh, Chemical Paper Mfg. Co, Paper, 14, (June 30, 1920). Cost accounting has become a comprehensive proposition and demands men with executive ability who can correlate cost work with efficient management. Cost information to-day must be available before action takes place to have a value. — A. P.C.

## CO-ORDINATING SCIENCE.

What America needs is not to give up its individual initiative in science but to add to its means for co-ordination and organization. We need a wider recognition, an increased social evaluation, of the place of scientific research in our national life, and hence a willingness not only to encourage and support individual scientific effort but also to insure a greatly augmented productivity of all present research agencies and a much more effective co-ordination of them both with regard to planning and with regard to executing the broad, inclusive scientific investigations which are required for the solution of the problems concerned with the most effective use of our national resources, with the highest production in our agriculture and industry, and with our national health and well-being. In a word we need more, and better, and better-co-ordinated science for the preservation and development of our national strength. The National Research Council is an organization that hopes to contribute in some degree, however modest, to the meeting of this need.—By Vernon Kellogg, in "International Conciliation."

## NEW CELLULOSE PERIODICALS.

The T.A.P.P. I. Committee on Bibliography desires to call the attention of the paper industry, and especially those interested in scientific and technical cellulose chemistry, to two new German periodicals which are devoted entirely to cellulose.

**Zellulose-Chemie. Wissenschaft Beiblatter zu der Zeitschrift "Der Papierfabrikant."**

This periodical, which is issued as a supplement to "Der Papierfabrikant", is edited by Emil Heuser of Darmstadt. Volume I, number 1, appeared April 30, 1920. It appears at monthly intervals, each number containing from 8 to 12 pages. The scope of the magazine may be seen from the following contents of the first five numbers.

No. 1—Apr. 30, 1920—Advances in Cellulose chemistry, by Emil Heuser.

No. 2—May 28, 1920—Methylation of cellulose, by Denham and Woodhouse. (Translation of articles appearing in the *Journal of the Chemical Society* 103, 1735 (1913); 105, 2357 (1914).)

No. 3—June 18, 1920 Trimethyl glucose from cellulose, by Denham and Woodhouse (Translation from the *Journal of the Chemical Society* 111, 241 (1917). The estimation of cellulose in wood, by W. H. Dore (Translated from *Paper* 26, no. 1, 10 (1920).)

No. 4—July 16, 1920—The enrichment of "Kraftstroh" with fungus protein, by Pringsheim and Liechtenstein.

No. 5—Aug. 20, 1920—Preparation of alcohol from wood, by Emil Heuser. The constitution of cellulose; an abstract of the work of Hess, appearing in the *Z. Elektrochem.*, 1920, p. 233.

In addition to the major articles, each number contains a number of abstracts of articles from journals on the subject of cellulose.

Der Papierfabrikant is published by Otto Elsner, Berlin, S. 12, Germany.

### Zellstoffchemische Abhandlungen.

This monthly magazine is edited by Carl G. Schwalbe of Eberswale, and is published by Carl Hofmann, Berlin, SW 11, Germany. The price of the first five numbers of 1920 is 20 marks.

The first number (June, 1920) contains an article by Rudolf Sieber on the determination of the calcium content of fresh sulfite liquors according to Feld-Sander; and also the first part of an article from the laboratory of Ost in Hannover on the acetoxylytic decomposition products of cellulose, by R. Prosigal. The July number completes the article by Prosigal and contains in addition an article by Schwalbe and Ernst Becker on the chemical composition of mechanical wood pulp.

CLARENCE J. WEST,

Chairman.

Mr. Justin C. Sanburn, Chemist, Strathmore Paper Company, Mittineague, Mass., has been appointed by President Hatch of the Technical Association of the Pulp & Paper Industry, chairman of a Committee on Beater Furnish, which will co-operate with a committee of the Cost Association in determining methods of estimating the quantities of materials added to the beater in the production of certain papers. Mr. Sanburn has accepted the appointment and is now studying the situation.

The cinchona tree, of tropical climes, produces the quinine of commerce.

# UNITED STATES NOTES

When operations were suspended for the week on Saturday, November 20, in the Corinth, N.Y. plant of the International Paper Company, notice was given to the employees that work would not be resumed until the following Tuesday. This marked the beginning of a five-day week schedule.

More than 550,000 pounds of German dyes are now available to American users of colors. In a special bulletin sent out by the Textile Alliance, Inc., which is handling the importation of the German product into the United States, a large list of dyes with prices, including duty and royalty, if any, is appended. The Alliance will accept orders on these dyes, subject to certain restrictions, among them being the agreement to use the dyes within six months from the date of delivery, and the proviso that consumers will not resell the colors without permission of the War Trade Board. Import licenses must be secured through the Alliance.

Changes in the correspondence work of the United States Army designed to save paper were announced last week as having been approved by Secretary of War, Newton D. Baker. The changes, which are described as drastic, follow the recommendation of a board of officers which investigated the "paper work" of the army. Present army regulations require that all communications relating to personnel must be prepared typewritten in triplicate, passing twice through the hands of numerous intermediate officers before final disposition is made of the matter involved. The changes approved by Mr. Baker eliminate many of the intermediate officers and permit the use of stamped indorsements, doing away with the necessity of various writted "O. K.'s."

Michigan, Wisconsin, and Minnesota in the Middle West; New York, Maine, Pennsylvania and New England, generally, in the East, and the entire Pacific Northwest are included in a reforestation plan approved at the recent business conference of the American Paper and Pulp Association at Chicago. The program suggested involves the spending of \$10,000,000 annually for addition of new forest lands. The plan had previously received the indorsement of the American Newspaper Publishers' Association and all of the associations comprising the wood using industries. Forest fire protection in the state, as well as national and private forests, is included in the scheme, and a Federal appropriation of not less than \$1,000,000 a year for this purpose, when duplicated by individual states within their own areas, is asked. While the manufacturers advocated this national and state legislation, they favor an organized woodlands section to aid in the application to privately owned timber land of the principles asked of governmental agencies. Among the suggestions for this section are the establishment of an "International Forest Experiment Station" to test growing of paper producing trees, use of the tractor in logging and similar problems.

Through the acquisition of a 26,000 acre tract of timber land in Jefferson and Lewis Counties, N.Y., the

Gould Paper Company has almost doubled its holdings in that section. The lands were purchased from the Tug Hill Lumber Company a week ago. While it is proposed to take some pulpwood from the newly acquired property, reforestation and maturing of trees will be carried on there mostly. The tract which figured in the deal is located about twenty miles from Glenfield, N.Y.

The Cost Association of the Pulp and Paper Industry has removed its headquarters from Fifth Avenue, New York to a new suite of offices on the sixth floor of 18 East Forty-first street, New York.

John L. Bagg, who heretofore has been associated with the Parsons Paper Company, was elected treasurer of the Miller's Falls Paper Company. An announcement to this effect was made by the directors of the company following a recent meeting at Miller's Falls. Mr. Bagg is to succeed the late Angus Cameron.

The coming report on paper to be purchased, by the Government Printing Office has just been completed by the committee on paper specifications and will be submitted to the Joint Congressional Committee on printing soon after the next Congress gets into session. The committee will recommend among other things that bids be asked for only one year instead of for yearly and half-yearly periods, but with the proviso that 20 per cent of contracts need not be filled if prices go up or down.

The Diem and Wing Paper Company of Cincinnati, O., recently opened additions to its quarters in New Orleans so as to have ample facilities to handle there a line of Warren Standard printing papers along with its other local business. The Diem and Wing people are now the distributors for the Warren papers at Cincinnati, Columbus, Louisville and New Orleans. C. W. Graessle is the manager of the New Orleans division.

The plant of the Wasne Mills, South Glastonbury, Conn., owned and operated by John W. Purtil and Son, was totally wrecked last week by a fire which brought out all the fire-fighting equipment of Glastonbury, East Hartford and neighboring towns. The factories were completely gutted despite the combined efforts of all the forces. As the elder Mr. Purtil is in Florida, it could not be ascertained whether the plant would be rebuilt.

Colin K. Urquhart, widely known to the trade both in the United States and Canada, died November 21, at his home in Brooklyn. Mr. Urquhart, a native Brooklynite and Cornell University graduate, was associated for years in various capacities with the Lockwood Trade Journal Company until his retirement from active business in 1914. He served at various times as editor of the **Paper Trade Journal**, **Lockwood's Directory** and the **Paper Mill**. Mr. Urquhart also had been associated with the **American Stationer**. Before entering the paper trade field, Mr. Urquhart was intimately associated with the late Whitlaw Reid in the capacity of confidential secretary. Mr. Urquhart is survived by a widow and a son, Colin K., jr.



# PULP AND PAPER NEWS



Paper shortage is given as the reason for the lack of High School text books, loose leaf note books and the junior class British histories in the Collegiate Institutes and High Schools of Toronto, according to Hon. R. H. Grant, Minister of Education. The Minister stated that he had gone to Ottawa, and with the representatives of other provinces, tried to get the Government there to put an embargo on the fine paper used in these books, but this was refused.

The many friends of Mr. H. B. Donovan, sales manager of the Canada Paper Co., Ltd., will be pleased to know that he is progressing favorably at his home in Oakville, Ont., and that he is expected to be back at his office in Toronto by Christmas, for a time at least.

Mr. R. O. Hughes, of Hughes & Easson, paper jobbers of Auckland, New Zealand, called on the paper trade in Toronto during the past week.

Mr. I. H. Weldon and Mr. Fred. Duncan, President and Secretary-Treasurer respectively of the Provincial Paper Mills, Limited, Toronto, received a shaking up in a railway accident this week on the G. T. R., at West Toronto, while on their way to their mill at Georgetown. Fortunately neither gentleman was injured.

Mr. Ralph H. Booth, President of the Booth Paper Company, Detroit, was in Toronto and other Canadian centres this week, looking into the newsprint situation.

Mr. Wilfrid Southwood, publisher of The Era, a Windsor, Ont., weekly newspaper, has been granted a company charter covering the issue of a daily paper. The new daily will be published early in the new year and will be the third of three daily papers in Windsor in addition to the Detroit papers which have a large circulation on the Canadian side of the river.

Mr. N. L. Martin, Secretary of the Canadian Paper Trade Association, and Mr. I. H. Weldon, President of the Provincial Paper Mills, Limited, have returned from a successful hunting trip to Hartley's Bay on the French River.

The George Shepard Printing Company, Limited, has been incorporated under the Ontario Companies Act to take over the business formerly run by George Shepard, 42 Colborne Street, Toronto. The capital stock is \$40,000 and the provisional directors are George Shepard, M. W. Shepard, Perry A. Shepard and E. W. White.

A representative of the sales department of the George H. Mead Company, who was in Toronto this week, brought back the news that there were twenty-six cases of smallpox at Sturgeon Falls and that there was some anxiety at the mill of the Spanish River Pulp and Paper Mills, Ltd., as to what effect the outbreak would have upon the operations at the company's mill.

Mr. George Webster, of the operating department of the Laurentide Company, was in Toronto this week watching some of the Laurentide paper go through some new presses installed at the Toronto Globe office.

Mr. J. G. Sutherland, President of the Port Arthur Pulp and Paper Company, Limited, visited the head office of the company in Toronto this week.

The current issue of the Ontario Gazette contains the announcement of the incorporation of the Cornwall Pulp and Paper Company, Limited, with a capital stock of \$200,000. The new concern is a close corporation of Buffalo men, largely, and in the company will figure several men prominent in American pulp and paper circles. The President and General Manager is Mr. J. B. O'Brien, who also holds a similar position with the Niagara Wall Board Company, and the treasurer is Mr. C. C. Hullinger who is also connected with the Niagara Wall Board Company and the Maine Pulp and Paper Company. Other directors are Mr. P. C. Deevle, of Toronto, President of the L. R. Steel Service Corporation, Limited; Lewis H. Manley, a director of the Davenport Coal Company, of Buffalo, and Fred. Dobeier, a Buffalo attorney. The invested capital has all been subscribed in Buffalo and New York. The company has leased a building at Cornwall, with an option to buy, and will manufacture groundwood pulp, while ultimately the enterprise will expand into a paper mill. The capacity will be forty tons of groundwood pulp daily, five grinding machines having been already delivered, and manufacturing operations will begin at the first of the new year. Two rossers for rough wood will be installed and it is planned to use peeled wood as the enterprise develops.

The Canada Box Board Company, Limited, with mills at Frankford, Montreal and Campbellford, has changed its name to the Canada Paper Board Co., Limited, with Mr. David F. Robertson as general manager.

Mr. M. J. Hutchinson, formerly manager of the Edmonton Bulletin, has been appointed manager of the Canadian National Newspaper Association, an organization of trade and class papers, in succession to Mr. Earl Wilson, and will take up his duties in the Toronto office on Adelaide Street, about Dec. 1st. Mr. Hutchinson, who is a Peterborough boy, was at one time on the staff of the Hugh C. Maclean Company and also the Acton Publishing Company, Toronto.

Mr. William Wallace, who in 1918 was appointed private secretary to Hon. N. W. Rowell, K.C., has been appointed manager of the Canadian Daily Newspaper Association, in succession to Mr. John Imrie. Mr. Wallace was a former member of the Toronto Star staff. He served in France with the 75th Battalion and won an M. C.

Mr. E. A. Crippin, paper jobber, Spadina Avenue, Toronto, has been appointed Canadian representative of the Grammen Paper Mills Company, of Norway, manufacturers of grease-proof and copying tissues.

The Mill Relations Committee of the Canadian Paper Trade Association has arranged with the various mills manufacturing book papers, manila, writings, covers, posters, tag manilas and bristols for a scale of discounts as follows: A base price to jobbers and earload buyers; a one-ton price, being 10 per cent advance on the base price; a 500-pound price, being 20 per cent advance on the base price; less than 500-pound lots, being 25 per cent on the base price. All of these lots to be sold on the basis f. o. b. mills.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Nov. 27.—A mill representative in close touch with the newsprint situation, who was in Toronto this week, estimated the lessened production in the Canadian mills, during the last couple of months, at about 9,000 tons, and the statement was made that November would show even a larger falling off, owing to the shortage of power caused by low water. Some of the mills were forced to close down for a time during the month and others, although hard hit, were greatly hampered in their production. As an off-set to the lessened production, although not affecting present conditions, it is pointed out that although paper stocks have been declining on the market active construction operations are proceeding on various paper mill enterprises in Canada. The Kaministiquia Pulp & Paper Co., at the head of Lake Superior, is pushing its work and will likely be in operation by the middle of December with an output of twenty five to thirty tons of ground wood per day, which will be shipped to the United States. A newsprint mill will eventually be added. Constructive work is also well advanced on the mill of the Port Arthur Pulp and Paper Company, and although building operations have been hampered by lack of carpenters, it is expected that the early spring will see the mill in operation. As will be noted, too, in our news notes, a new ground wood pulp mill is about to be established at Cornwall, in addition to the Howard Smith proposition, and this will ultimately develop into a paper mill as well.

In regard to the recent heavy decline of many pulp and paper stocks in the market, it is pointed out that the losses were in the speculative stocks and all the companies were affected by the change, and after all, the biggest decline might, from speculative reasons, have taken place in the case of companies which were most firmly established and whose earning powers were the highest. It is stated that Canadian paper companies would have an advantage for some time to come because of the low cost of production through proximity to raw materials, while at the same time having the advantage of the price being fixed in the United States market where production costs are higher. When the production here surpasses the production across the line the price will be fixed in Canada. In the meantime it is interesting to note that the International Paper Company has fixed its price for the first quarter of the coming year at six and a half cents, which is the same as during the past three months, but nothing has yet been decided as to what the Canadian mill will charge for the same period. Quite a number of grinders have been closed down lately in Canada owing to low water and the ground wood shortage is very marked.

WRAPPING PAPERS.—Although there is a distinct dullness in the wrapping trade paper, prices are holding firm and it is generally believed that the prevailing dull in business is of a temporary character. Consumers are still holding off buying, hoping for a drop in values but the jobbers say that by the first of the

year they will have to come into the market again. No large stocks are being held either by the jobber or the consumers. Several of the jobbers reported this week that they had about one month's supply of wrapping on hand and that they were not experiencing the old difficulty of getting sufficient stock to carry on with. There are now practically no unfilled back orders at the mills, it is stated. All the arrearages have been overtaken and although the new orders are fairly liberal the mills have reached the stage when they are looking out for business. The same conditions apply to the paper bag business. The stores are not stocking up and it is not likely they will until business conditions are better than they are at present or unless there should be a drop in the paper market.

BOOK PAPERS.—Book papers continue to stand in a class by themselves in respect to shortage and demand and so far the mills have been unable to keep up with the requirements of the jobbers and consumers. It is stated that some Old Country book paper is on the way and one shipment has already arrived in Toronto. The price laid down here, however, is too high to permit of any very serious competition being established in this quarter.

TISSUES AND TOILETS.—Prices fixed on September 22nd last remain unchanged and it is likely that no alteration in the price schedule will take place until raw stock becomes easier. High prices for pulp still prevail and the mills are holding off in their buying due to the high rates they have to pay for the raw material and the lessened demand for their product. Smaller orders continue to characterize the trade and very few big contracts are being made, but a fairly satisfactory volume of business is being done and the smaller orders are mounting up. While the toilet and tissue mills have to pay long prices for their raw stock there is no difficulty in getting it, but like the jobbers and consumers, they, too, have visions of a falling pulp market and are buying nothing except what is absolutely required for immediate use.

BOX BOARD.—Stocks of all board lines have been greatly depleted during the past few weeks owing to lessened buying and mill representatives report that while there has been a distinct falling off in demand, a fairly good business is being done in small orders and the trade is optimistic. It is anticipated that by the first of the new year buying will have resumed its usual activity.

RAG AND PAPER STOCKS.—Prices on new cotton cuttings shaded off slightly during the week, when mills practically stopped buying. Only the continued scarcity of material keeps prices at their present level. Old rag prices are purely nominal as most of the larger dealers have withdrawn from the market and will only buy against firm orders from consumers. Business among the smaller dealers is at a standstill and the outlook for the winter is reported as very blue. The waste paper business has vanished into thin air. With the exception of hard and soft shavings, no business of



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any volume has been booked for the past two weeks. Mills that formerly ordered in one hundred to five hundred ton lots have now either stopped buying altogether or are buying one or two cars at a time to tide them over. Prices quoted are only approximate and represent dealers' values only. All quotations given by packers and mills are subject to change without notice, in fact the real price at which stock is saleable today is so low that even were the dealers to get the paper for nothing, the labor in packing, grading and handling would eat up all the profits. The feeling of optimism that characterized the trade a few short weeks ago has now given way to a feeling that "the worst is yet to come". It would appear, however, that any firm buying on the part of the mills would send the price up as the visible supplies in the dealers' warehouses are practically negligible.

Following are quotations on rag and paper stock:

	Per Cwt. F.O.B. Toronto
No. 1 shirt cuttings	\$21.00—\$22.00
No. 1 unbleached cotton cuttings	\$16.50—\$17.00
No. 1 fancy shirt cuttings	\$11.50—\$12.00
No. 1 blue overall cuttings	\$11.00—\$11.50
Bleached shoe clip	\$15.50—\$16.00
White cotton hosiery cuttings	\$16.00—\$16.50
Light colored hosiery cuttings	\$12.50—\$13.00
New light flannellette cuttings	\$14.50—\$15.00
No. 2 white shirt cuttings	\$12.00—\$12.50
City thirds and blues (repacked)	\$ 2.25—\$ 2.50
Flocks and satinettes	\$ 1.00—\$ 1.20
Tailor rags	\$ 0.90—\$ 1.00
Gunny bagging	\$ 1.25—\$ 1.50
Manila rope	\$ 5.00—\$ 5.25
No. 1 white envelope cuttings	\$ 8.00—\$ 8.50
No. 1 soft white shavings	\$ 7.50—\$ 7.75
White blanks	\$ 4.50—\$ 5.00
Heavy ledger stock	\$ 3.75—\$ 4.00
No. 1 magazine	\$ 2.00—\$ 2.25
No. 1 book stock	\$ 2.00—\$ 2.10
No. 1 manila cuttings	\$ 4.50—\$ 4.75
No. 1 print manila	\$ 1.75—\$ 1.85
Folded news	\$ 1.40—\$ 1.50
Over issue, news	\$ 2.50—\$ 2.60
Kraft	\$ 4.75—\$ 2.00
No. 1 clean and mixed papers	\$ 0.80—\$ 0.90

Edmonton, Alberta, Nov. 27.—Drillers operating under the direction of the provincial government have struck a large field of pure salt at Fort McMurray, it was announced today. They have bored through thirty feet of the mineral at a depth of 650 feet, it was said.

**CHEMICAL QUOTATIONS.**  
New York Prices.

		Car lots	Less car lots.
Acetic Acid, 28 percent	100 lbs.	3.50 - 3.75	4.00 - 4.50
Hydrochloric Acid (nominal)	100 lbs.	1.85 - 2.25	2.75 - 3.00
Sulphuric Acid 66 deg., drums	Ton	21.00 - 22.00	22.50 - 23.00
Aluminum Sulphate, commercial	lb.	.03¼ - .03¾	.04 - .04½
Aluminum Sulphate, iron free	lb.	.04 - .04½	.04 - .05¼
Barium sulphate (pre-clip.) (blanc fixe)	lb.	.04½ - .05	.05½ - .06
Bleaching powder (calcium hypochlorite)	lb.	.05½ - .05¾	.06¼ - .06¾
Chlorine, gas, liquid-cylinders (100 lb)	lb.	.09 - .09½	.10 - .10½
Litharge	lb.	.12 - .12¼	.13 - .13½
Methanol, 95 p. c. (wood alcohol)	gal.	...	1.85 1 1.90
Potassium prussiate, yellow	lb.	.73 - .75	.78 - .80
Salt cake	ton	...	52.00 - 55.00
Soda ash, light	100 lbs.	2.05 - 2.10	2.20 - 2.40
Sodium hydroxide (caustic soda)	100 lbs.	4.00 - 4.10	4.30 - 4.50
Sodium hyposulphite	lb.	...	.04 - .04½
Sulphur, crude	ton	16.00 - 20.00	...

**NEW YORK MARKETS.**

New York, November 27—(Special Correspondence) —What is considered one of the most important developments in the paper trade in some time is the announcement by the International Paper Company from its main offices in New York that its price on newsprint to contract customers during the first quarter of next year will be on the basis of 6.50 cents per pound f.o.b. mills for newsprint in standard rolls in earload lots or more. This is the same price prevailing for the final quarter of 1920. There have been numerous rumors, going the rounds of the trade in recent weeks relative to the contract price to be fixed by the I. P. for 1921. Some have alleged that the price would be advanced, 7 cents having been the figure commonly named, while others have inferred that the contract basis would be lowered. The announcement issued this week puts to rest all of the varied rumors, and, moreover, would seem to support those members of the paper trade who have contended that contract prices on all kinds of paper are most likely to undergo scant change during the course of the next few months.

With market conditions as now exist, the main-

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Magenta Powder.

Bismarck Brown R. conc.  
Safranine B.S.  
Safranine R.F.F.  
Methylene Violet 2R. conc.  
Methylene Violet 2B. conc.  
Malachite Green Crystals.  
Methylene Blue B.B. conc.  
Methylene Blue 1814.

## SUBSTANTIVE COLOURS

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Paramine Sky Blue F.F.  
Paramine Blue 2B.  
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Paramine Yellow R.  
Paramine Brown G. conc.  
Paramine Brown M.

Paramine Fast Bordeaux B.  
Paramine Green G.  
Paramine Violet N.  
Paraphenine Yellow G.  
Diazamine Fast Yellow H.  
Rosophenine 10B.  
Benzopurpurine 4B.

Paper Black 3181

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Orange IV.  
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Acid Prune V.  
Brilliant Bordeaux B.

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Ponceau 4R conc.  
Croceine Scarlet 5R.  
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tenance of the contract basis on newsprint by the largest producing company in the country carries greater weight and importance than is probably noted on the surface. With newspaper publishers all over the States holding off in buying paper for the admitted reason that they expect prices to decline, the fixing of a price to contract customers over the first quarter of next year at the same level now obtaining should have the result of reviving confidence among paper consumers in the stability of prices and cause them to resume buying on something approaching a normal scale. Whether this will come about is at present problematical, but members of the local paper trade take a decidedly more optimistic view of matters than they did before knowing what the I. P. contract basis next year is to be. A consensus of opinion also is that the International made a wise move in fixing the price that it has, it being commonly felt that the present would be an inopportune time to advance prices, when the general trend of prices on nearly all commodities is toward lower levels, and that the maintenance of prices on an unchanged basis should be creative of an improved sentiment among paper consumers. President P. T. Dodge, of the I. P., announced some time ago that contract customers of his company would be allocated but 80 per cent. of the tonnage of newsprint next year that they have secured from his mills in 1920, the reason for this reduction in tonnage being that the International has acquired so many new customers in recent months that in order that all can be supplied tonnage commitments must necessarily be decreased.

Spot prices on newsprint in rolls have gradually worked down to where they are hovering around 7-cents per pound at mill, with occasionally a sale reported at an eighth of a cent under this figure, but quotations appear steady at this basis and it would seem that there is small likelihood of the recession in spot values continuing because there is now only a matter of half a cent per pound between contract and open market prices. Publishers, if they have any comprehension at all, should quickly see that newsprint prices have about touched bottom, and there seems little question that when this sinks well into the craniums of buyers, demand for print paper should broaden to a considerable extent in view of the fact that the average publisher of daily newspapers in this country is confining his consumption of newsprint within a limit where he is omitting quite a lot of advertising. In other words, there is a tremendous unfilled demand for print paper that is pent up by the determination of publishers not to buy in the open market until satisfied prices have struck bottom, and with every indication pointing to the minimum level having been reached for at least a period of four or five months, buying should be resumed in more normal fashion.

There are few important changes otherwise in the paper market. Spot values continue on the downside under a lack of business activity, but contract prices are maintained. There is very little demand for any kind of paper from transient buyers, and the trade is suffering from the same dull conditions affecting practically all commodity lines. Spot prices are quite irregular and extremely difficult to determine. It all depends on how badly the buyer is in need of paper or on how urgently the manufacturer or dealer wants business. Consumers with cash in hand can require most grades of paper in sizable amounts at about any prices they offer in some quarters, which means that

certain paper concerns, principally jobbers, are feeling the tight money conditions to such a degree that they are being obliged to liquidate stocks for whatever they can realize.

Boards have steadied at a quotable basis of about \$60 per ton f.o.b. mills for plain chip and \$70 for filled news board. Demand has not expanded to any worthwhile extent but there is a better undercurrent in the market, due in the main to curtailment of output by manufacturers, who evidently have decided to pursue a waiting policy until business conditions in general, and more especially in their own line, have improved.

GROUND WOOD.—An easy tone still characterizes ground wood prices although quotations are close to the same levels named a week ago. Domestic ground wood of prime quality for prompt delivery is quoted at around \$100 per ton at grinding mills, with the probabilities favoring some consumers being able to buy at \$5 a ton less, while imported pulp is available at \$85 to \$90 ex the dock. There is only a slight demand coming from consuming quarters, yet everyone on the selling end of the trade is more or less bullish regarding the outlook and profess to believe prices will recover some of their losses during recent weeks before the winter is over. Much emphasis is put on the light stocks at both grinding plants and consuming points and it is felt that this factor alone will bring about enhancement of values if demand attains more normal proportions.

CHEMICAL PULP—There is very little stirring in the chemical wood pulp trade. Papermakers are doing as little buying as current requirements will permit and are limiting orders almost entirely to small tonnages needed for immediate use. Prices are marked by an easy tone, as would be expected under the circumstances, yet there have been no sharp declines in prices and producers in a majority of cases are naming comparatively firm figures. Studying conditions closely, it appears that some supply of foreign pulp is coming into this country on consignment and this pulp is being offered at price concessions, but signs point to domestic manufacturers having but little production to dispose of to other than contract consumers, which serves to preclude any notable selling pressure on domestic pulps. Quotations on spot shipments of domestic bleached sulphite range from 11 cents a pound at pulp mills upward, on domestic easy bleaching sulphite at between 8 and 8.50 cents, on news grade sulphite at 7 to 7.50 cents and on domestic kraft pulp at 5.75 to 6 cents. Foreign bleached sulphite is quoted at 12.50 to 13 cents ex dock, foreign easy bleaching at 9 to 9.50 cents, foreign unbleached sulphite at 8.50 to 9 cents, and foreign kraft at 6.25 to 6.50 cents.

Imports of foreign pulp at the port of New York this week included 5,639 bales from Rotterdam and 351 bales from Vancouver.

RAGS. Current demand for papermaking rags can be described as virtually nil. Of course there is some little business passing off and on, but there is no concerted movement of any grade of rags, paper mills claiming to be in less need of rag stock than ordinarily and that they have sufficient rags on hand to supply present requirements. Prices are at best nominal. Dealers ask one price and then when given an opportunity to make a sale readily cut prices to the level demanded by consumers. Even new cuttings, which have held relatively firm for a long time, are easing off in value, and white shirt cuttings of No. 1 quality are to be had at 22.50 to 23 cents per pound at shipping

points, new unbleached muslins at 17.50 cents, new lawns at 20 cents, new blue overall cuttings at 11.50 cents and new No. 1 washables at 10.50 cents. Old whites are off slightly at around 10.50 cents for No. 1 repacked and 5.50 cents for No. 2 repacked, while reports allege that repacked thirds and blues have been bought by mills at 3 cents at shipping points. Roofing rags are quoted at a basis of about 1.10 cents per pound for No. 1 packing.

**PAPER STOCK.**—Trying conditions continue to prevail in the paper stock market. Consuming mills are not in want of much supply and packers are provided with a narrow outlet for their production, with the result prices are weak and steadily moving to lower levels. Quotations to mills on a f.o.b. shipping point basis are about as follows: No. 1 soft white shavings, 7 to 7.25 cents; No. 1 heard white shavings, 8 to 8.25 cents; ledger stock, 3.25 to 3.50 cents; white news cuttings, 4 to 4.25 cent; old No. 1 kraft, 3.85 to 4 cents; heavy magazines, 1.65 to 1.80 cents; folded news, 85 to 90 cents per hundred pounds, and No. 1 mixed papers, 45 to 50 cents per hundred.

**OLD ROPE AND BAGGING.**—Both old rope and old bagging are in an inactive state and prices are moving downward. No. 1 manila rope is quoted at about 5 cents per pound at shipping points, and No. 1 scrap bagging at 2 cents. Old mixed strings are available at 2.25 cents and No. 1 gunny bagging at 2.50 cents.

#### NON-UNION.

While an Irishman was gazing in the window of a Toronto book store, the following sign caught his eye: "Dickens works all this week for only \$4."

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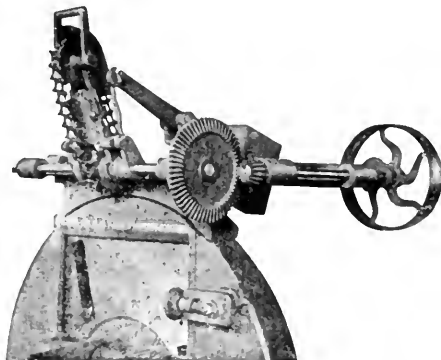
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# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., December 9, 1920.

No. 50

## TABLE OF CONTENTS

### Editorial:

A boomerang . . . . .	1247
Mill men and technical men . . . . .	1248
International did not raise price . . . . .	1248

### Special Articles:

Mechanical logging and practical re-forestation . . . . .	1249
A census of the pulp and paper industry in Canada . . . . .	1253
Practical training for foresters . . . . .	1256

### Miscellaneous Information:

Successful men have studied . . . . .	1251
Air maps for wireless patrol reports . . . . .	1252
Disagrees on esparto . . . . .	1252
A new saw guard . . . . .	1258
The art of box-making . . . . .	1260
Seaweed pulp successful . . . . .	1260
Review of recent literature . . . . .	1262
Relative importance of slip and friction in belts . . . . .	1263
What fungus does to wood and pulp . . . . .	1263

### News of the Industry:

Canadian winners . . . . .	1257
W. F. Maclean attacks paper makers . . . . .	1257
Really criminal pulp makers . . . . .	1257
Want duty on publications . . . . .	1258
Hydro-Electric instals steam roasting plant . . . . .	1259
Paper prospects in Britain . . . . .	1259
Abitibi has a live science club . . . . .	1259
Pulp mill stoeck increased in October . . . . .	1259
Borden goes from U.T.A. to A.W.P . . . . .	1260
Laurentide to haul wood on ice . . . . .	1260
Caught in shaft, has narrow escape . . . . .	1260
Will make them in Canada . . . . .	1260
Pulp and paper news . . . . .	1261
British Columbia mills well engaged . . . . .	1261
Millidge promoted . . . . .	1263
United States notes . . . . .	1264

### The Markets:

Canadian trade conditions . . . . .	1285
New York markets . . . . .	1266

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J. NEWELL STEPHENSON, M.S., Editor

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for. Subscription to any address in Canada, United States and British Empire, \$5.00 yearly. Other Countries Postage Extra. Single copies, 15 cents.

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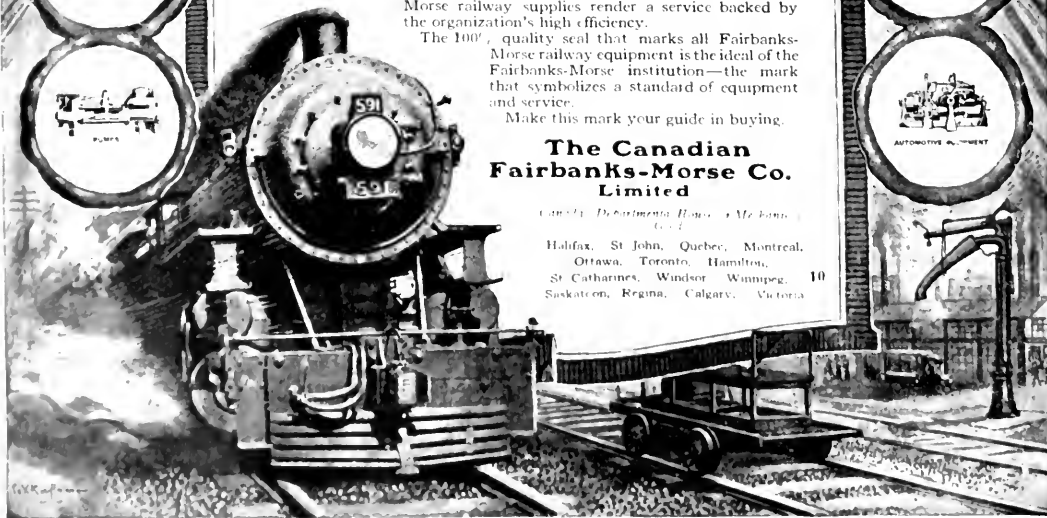
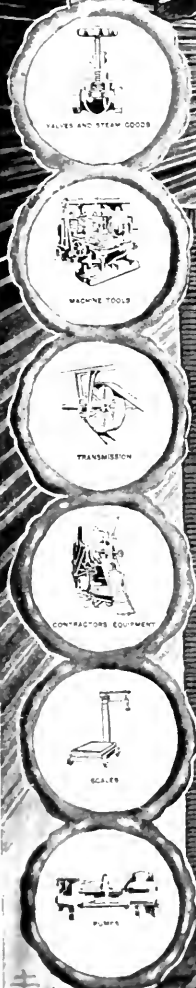
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# EDITORIAL

## A BOOMERANG.

A prominent newspaper publisher of Toronto recently addressed a Montreal gathering and his remarks on the subject of Government control of the price of newsprint costs of production ran from \$50 to \$60 a ton. The action of the publishers of Canada in demanding such regulation has turned out to be a boomerang, the effect of which is just now beginning to be most seriously felt. It will be recollected that at a time when newsprint costs of production ran from \$50 to \$60 per ton, a ruling was made at Ottawa at the instance of the newspaper publishers of Canada, without proof by them that such ruling was really necessary, which required the mills to sell their product for \$50 per ton. This was, for some mills, less than manufacturing cost, for all mills it represented a loss of the difference between the Government fixed price for domestic and the sales price obtainable elsewhere. The speaker referred to admitted that there was an actual saving to publishers at the time of thousands of dollars and at that time the immediate relief thus furnished seemed the most desirable of events. The public, and especially the advertising public, was of course quite well aware that the paper manufacturers were bearing a large proportion of what should have been legitimate publishing expense and they too, benefited by the condition which made it impossible and certainly inadvisable for publishers to raise advertising rates. It must be remembered that this took place at a time when all other commodities were rising in price and the same Government which set a *maximum* price on newsprint which was in some cases actually below cost of manufacture, also set a *minimum* price on wheat which was in excess of any price for this commodity within our recollection.

The publishers, therefore, lost the opportunity at the psychological moment for increasing the rates from their principal source of revenue, an increase which could legitimately have been made at a time when practically all costs were mounting. Having thus begun gradually to increase rates in harmony with increasing costs, assuming that newsprint had not been tampered with, their revenue would have reached a level where the effect of the increase would have been of benefit for the whole period of price inflation and they would have been in a position where they could decrease their rates without great loss and in harmony with declines in costs that must become general and even now are becoming evident in most

lines. Instead of having been able to follow this economically sound and recognised procedure, many publishers are now finding themselves with a stock of high priced paper and faced with the necessity of contracting supplies at prices which, because of persistently high cost of manufacture and abnormal demand, still show no immediate signs of recession, and they cannot therefore concede decreases in advertising rates without incurring considerable loss. This loss should already have been provided for and largely absorbed by the initial increases at the logical moment.

We have thus paraphrased the digest that was given us of the publisher's remarks. He is to be commended for his frank expression of what has actually been the result of meddling with the law of supply and demand. There are doubtless many others who have come to the same conclusion but who are not courageous enough to admit it. It is practically impossible that any such situation should again arise as was experienced during the great war. The relations between mills and newspapers are again quite harmonious and there is not much inclination to harbor any ill feeling for what has passed. The price for newsprint is still high and is likely to remain high as long as the demand is greater than the supply. This condition has not improved of late and the effects of recent low water levels and the usual decrease in production due to the coming of winter, will not improve matters. The tendency lately has been for the consumer to meet the situation by using less paper and getting out smaller issues. That has been the practice for many months in England and a leaf from their note book might help out considerably on this side. With naturally decreased production and the difficulties of transportation in the winter time, the going will not be any too smooth for the next three or four months.

The Toronto World must have seen our comment on the proposition for a government pulp mill. It takes the idea of prison labor and suggests a model criminal community in the form of a pulp mill, including woods operations, where prisoners will be employed at real wages. The same kind of scheme has been proposed in the United States but never worked out. As a method of re-establishing a criminal's self respect, there is much to commend it; as a means of supplying The World with cheap paper in competition with the enterprise of honest, law-abiding citizens there is everything to condemn it.

*MILL MEN AND TECHNICAL MEN.*

The announcement just received from the Secretary of the Canadian Pulp & Paper Association, that the manager of one of Canada's largest newsprint mills has joined the Technical Section, suggested a few comments on the desirability of mill men becoming members of this branch of the Association. For those whose education has been rather along the lines of academic subjects, or practical experience in the administration of the business, the Technical Section provides an opportunity for joining as associate members. The privileges of membership are the same, though the opportunities for service are somewhat different, the full member having been trained in such a way that he is expected to serve the industry best by conducting investigations, developing technical control, establishing scientific methods, and in other ways applying his special educational training to the improvement of the processes of pulp and paper manufacture. The associate member, on the other hand, whether he be a practical mill man or one who is especially concerned with administrative affairs, could render service in a capacity peculiar to his position and training. He could support and encourage the work of the technical man and make it easier to translate the suggestions and discoveries of the active member into practical helpfulness in the operation of the mill.

It is distinctly worth while for the man who is qualified to join the Technical Section as an associate member to do so. It gives him a feeling of fellowship with the technical men from whom he expects to get considerable help in improving the operation of his mill. The feeling of belonging to the same family is conducive to more harmonious relations between the technical men and the so-called mill men. Both classes are essential to the development of the industry and to the economic success of the individual plant. The mill whose manager has just joined the Technical Section has made a marked success in introducing technical control and has achieved a wonderful result in getting the co-operation of the men in the mill and the men in the laboratory. The personality and the efforts of this manager are largely responsible for the result and a similar success is possible in other mills. The personality of the technical staff is also an important factor; a little humility along with much enthusiasm and good nature helps a lot. There is a good supply of such qualities in our mills, so it is not surprising to see Canadians making progress along these lines.

We feel that the representation of the whole industry as far as possible in the Technical Section, will be most helpful to the success of the pulp and paper mills in Canada. No one need feel embarrassed at the meetings of the section. The technical man naturally talks of concentration, retention, horse power, specific gravity, etc. These terms should not be a foreign language to anyone in the industry; and they

won't be, when more mill men take advantage of such opportunities as are available in night schools, extension classes and correspondence courses.

*INTERNATIONAL DID NOT RAISE ITS PRICE.*

In our editorial comment in the Pulp and Paper Magazine for November 25th reference was made to the price to be charged by the International Paper Company for the first quarter of 1921. Advice of its decision to charge 6½c. came just as we were going to press and in formulating the paragraph referred to we had in mind that 6 cents was being charged by some companies for current shipments during the fourth quarter of 1920. No change is made as will be seen from the prices for the current year, viz.: 4½, 5, 5¾ and 6½ cents, respectively, for the 1st, 2nd, 3rd and 4th quarters. We regret very much that this editorial has inadvertently placed the International in the position of having raised its price instead of clearly commending its action as should have been done for its moderation in not charging more than current rates. Not only has the International refrained from increasing its price of newsprint, but has actually absorbed some increased items of manufacturing cost rather than pass them off on the customer.

*COBWEBS.*

Some people have great imagination and imagination properly employed is a most helpful thing. It is a strange flight of fancy, however, that will make a supposedly intelligent man assert that the price of newsprint in Canada is bolstered up by the effect of the tariff. A moment's consideration will show that newsprint is being sold at an equal, if not an actually lower average price, and we believe in no case a higher price, in Canada than the same manufacturers obtain for their product in other countries. Further, more, tariff or no tariff, newsprint cannot be bought in any other country and sold in a Canadian market as cheaply as Canadian publishers could buy it from their fellow citizens, and finally, the Canadian paper manufacturer has sufficient patriotism and pride to see that no fault of his will require Canadian publishers to use other than Canadian newsprint, a remark which also well applies to other lines of paper manufacturing.

Sir Lomer Gouin, for many years Quebec's political leader, who is closely connected with our industry as a director of the Laurentide Company, has just been elected to the board of directors of the Bank of Montreal. Sir Lomer has given up his editorial connection with *La Presse*.

Let's go to Iroquois Falls for Christmas. Every house-holder is to receive a turkey.

# Mechanical Logging and Practical Reforestation\*

By ELLWOOD WILSON, Chief Forester, Laurentide Company, Grand'Mere, Quebec.

Mr. Chairman and Gentlemen: The question that I am supposed to speak about today is so big that it is very hard to know what to say and what to leave out.

A very interesting fundamental proposition comes up and that is the conflict between the so-called practical man and the theoretical man. Now there are two differences which distinguish these classes of men. In one case you have a man who has gotten everything that he knows by experience. In the other case you have a man who has had put into his head all the experience that it is possible to have obtained on the subject in a general way.

It depends very greatly on the personality of these two classes of men just how they function, but other things being equal, the theoretical man can obtain rapidly the experience which the practical man already has, and not only that, when he is face to face with new circumstances, he is able to replace himself and utilize his knowledge better than the practical man.

The so-called practical man, when he faces a new set of conditions which are not covered by his experience, very often in attempting to utilize his experience falls down on the problem placed before him.

Fundamentally, there is not the difference between these two classes of men that we are often led to believe; they are much closer together than you would gather from many discussions which we have heard, but in discussing this whole question of the future development of logging operations, I want to say a little bit about the fundamental principles. In my experience the only way to tackle any problem is to get rid of all the non-essential features and get right down to bedrock, get right down to the essentials of the problem and then you are able to discuss it intelligently and in a way which is much more practical and much better than you could do otherwise.

This whole question of the improvement of logging operations is more or less a psychological question, that is, it is a question of men's minds and men's way of thinking about things rather than any practical question of method or operations.

For instance, the men who have been operating in the woods in the past are men who have, to a great extent, grown up in the woods and they have been more or less supposed to have some sort of occult faculty, some sort of super sense which particularly fitted them for the work in the woods. In my experience, that has not proved to be true, and the time has come when the operations in the woods must be placed on the same basis as operations in the mill. Nobody would think today of running a big paper mill without trained chemists, without trained engineers, without trained cost accountants, etc., but up to this time we have not had this class of men in the woods. We are only just beginning to realize that logging, after all, is a branch of engineering, that it requires a certain amount of technical education, a certain amount of

technical training without which nobody today can be a successful logging operator. We have got to realize that fact, and with all due honor to the men who have blazed the trail in the past, who have gotten out our logs and who have kept our mills supplied with raw material, the day has come when we must change our methods and get more men with technical training in the woods.

In the past the question has been to get out raw material at the lowest cost possible, regardless of anything else. The managers of the mills have said: "We want so many thousands cords of wood a year," and if logging costs went up the least little bit, there was immediately a holler and the man responsible for getting the material, the timber, out of the woods and into the mill was hauled over the coals if his costs were a little more than in the past. Conditions under which labor has worked in the woods have been very difficult and we have come to realize today that the men who work in the woods must have the same comforts and the same decent living conditions that the men who work in the mill have.

We have come to face a good many difficult problems and in the solving of these problems, we want the very best trained minds that we can get, but we have to do away with old-fashioned ideas, with old superstitions and with old fetishes; we have got to face these problems in the same way that we have faced engineering and operating problems in our mills.

The increased cost of labor, the increased cost of material and the increased cost of equipment of all kinds require that we must pare the cost of our operations down just as much as we possibly can. There is only one way to approach these problems and that is a thorough, practical one: it is on the basis of experimentation. I have always believed that the only way to find out whether a thing was right or wrong—using those words in the sense of whether it is best or not—is to try it out and if the average business man would spend as much time in trying new methods as he spends in trying to think up objections to new methods, we would be a great deal farther ahead.

It is surprising to me, very often, how men who stand high in their industries, who have had long experiences, when approached by a new idea very often immediately, without any particular knowledge or without any particular thought, begin to think up reasons why that particular idea cannot be put into practice. I have been accused personally of putting forward a great many crazy ideas, but I can say perfectly frankly that I have never put forward an idea yet which has not been carried through, and I think that any man who gets a new idea and will study the thing out carefully and examine his idea and himself thoroughly and then begin to talk about it, can very often put it across.

In our woods operations, as I say, we are faced with rising costs all along the line and we have made absolutely no progress so far as I know, since we first began logging in the old days. We are using the same methods of hauling and almost the same methods of

\*Address to Woodlands Section American Pulp and Paper Association, Chicago, 12th November.

cutting. We have to some extent, of course, substituted the saw for the axe. There has been some effort in the East to use tractors in logging. Of course we have to leave out of this discussion the large timber operations in the west in which machinery of all sorts has been used and where they are coming more and more to do away with hand labor. The large size of their timber and the difficulties of getting it out makes such things imperative.

In previous years our labor costs have been so low that we have been able to use man power and horses to a very large extent, but the day of that practice is almost past and what we need now in our woods' operations is men who will think out new mechanical methods for getting out the small amount of timber per acre which stands in our Eastern forests and men who will develop these methods and put them into practical use so that we can cut down the expense of our logging operations.

Another thing which has come up today which is of the utmost importance is the question of the continued yield of our forest lands. In the language of a forester, we have got to come to a basis of sustained yield. We are not going to be able any longer to mine the timber from our forests as we have mined our coal and metals and oil. The forest is not, and never was, intended to be mined; it is a growing crop and it must be handled on entirely different lines than our mining operations.

In order to do this and do it practically, there have got to be some laws in logging enforced so that the forest after logging will be left in a condition where it can continue to produce trees. The time has gone by when we can go into the forest and cut down trees here and there and everywhere, burn up the forest by carelessness; somebody carelessly dropping a match, and sweeping away all our chances of future crop. We have got to leave the forest in a condition to give us another crop and not only another crop but a crop in the very shortest possible time.

In order to do this, we have got to adopt some selective system of cutting. This, of course, will naturally raise the cost of our timber, but only temporarily, mind you. Once this system is established, the cost of logging instead of rising constantly as it does at the present time, will more or less average itself out over a series of years. To make this clear by an example, take a new tract of territory and follow out its history, especially as we have logged in Eastern Canada. Going into a new tract, logging operation would commence on a river or on a lake and all of the timber which could be gotten out easily and cheaply would be taken out the first year at a very low cost. The second year the operation would have to go back a little further with rising costs. The third, fourth and fifth years, it would be necessary to go further back, with the costs still rising.

If the timber had been taken out back to the water and the first year, the cost of that year's operations would have been greater but all the timber from the river right back to the end of the operation would have been brought out at once. The next year the same thing would have been done with costs approximately the same, so that while the cost would have been higher the first year, over a series of years the cost would have been uniform.

Everybody knows that when you let a contract to a logger or contractor to go into the woods, he is not going to care about your interests at all, he is going to

take out the timber which it is easy for him to get out and which will net him the biggest profit, and this system of using contractors and jobbers has been the ruination of more forest areas than anything else I know of. It was an easy way to get out the logs and a fairly cheap way to get out the logs, but when you consider the results in the long run, we are going to be a great many years in paying for that sort of logging operation.

#### A Bit of Prophecy.

I would like to prophesy a little bit as to the future of logging operations. From what I can see of the trend of affairs in the West and some of the things which are taking place in Scandinavia, and when I think of what has been accomplished in the change of methods in our paper mills and in our great industries. I look forward to the time when our logging operations will be carried on much more by machinery than they are at the present time. I think we are just on the verge of having a mechanical saw which can be carried around easily from tree to tree and with which one or two men can do the work of a dozen. I think that it will only be a very short time until we will have a machine very much like the pneumatic or electric drill at the present day with which the branches can be taken off the trees and can be swamped much more economically than at the present time. I think that American ingenuity will very soon develop types of tractors or mechanical haulers which will enable us to get our timber out to much better advantage and much cheaper than the present method of skidding it out with horses.

All of these things are perfectly feasible, they are certainly not out of the way and if we would get the best mechanical talent possible and put these problems up to men who have been trained in developing various types of machines, we would soon have great advances.

You all know the forest today is a collection of good trees and trees which, up to the present time, we have found no use for.

In order to log to the best advantage today, we have to cover very large areas to get a relatively small amount of timber and I feel sure that the practical men of today and the business men of today will very soon come to realize the futility of covering ten or twelve square miles to get a small cut of timber and they will come to the opinion that was expressed in England at the Imperial Conference this year by forty out of forty-five delegates that the day of natural reforestation is very rapidly nearing an end.

This is a very broad statement but at the same time when you come to analyse the situation I think you will, after due consideration, more or less agree with me on this matter. You take large areas of timber and perhaps get from them on an average of five to six cords to the acre as we do in Canada, where we cut under certain Government diameter regulations—I believe you make runs as high as fifteen or twenty cords to the acre—you must take your men into the woods, take your provisions long distances and cover large areas in order to get out this five, ten or fifteen cords to the acre. When you stop to consider that after you have taken out that timber you have got to wait forty or fifty or sixty years for another crop which, so far as anybody knows at present will be but a very small fraction of the crop which you have taken out in your first cut, you will realize what huge areas must be covered to get the timber which you need. It would not seem economical or practical to you, and you will surely come to the idea which has been forced on the experi-

ence of European countries, that if we are going to carry on our industries, the best way to get the timber is to operate areas as near the mills as possible. Plant the areas with the very best possible stock you can get with the very largest amount per acre and then when your logging proposition comes along, look how the whole thing is going to be simplified. Instead of driving or hauling or raiing your wood all the way from 50 to 200 miles, let us say, you are going to be able to go out within ten or twenty miles of your mill, put in your portable electric railway, utilize machinery which will cut your trees down just the way you cut your corn crop today and you are going to get instead of five, ten and fifteen cords per acre, forty of fifty cords. You will reduce your logging costs and simplify all of your operations. Instead of huge wood piles which we see in some of our Northern countries to carry us through the winter with insurance and money from the stump to the mill. We are going to utilize a tree the same day it was cut, perhaps, or the day after.

I know that a great many people will be skeptical and a great many people will think this is a crazy idea, but when you come to study the whole thing out carefully and to get right down to brass tacks in the matter, you are going to see that for the future this is going to be the ideal method. You can say, "Of course we won't live to see this; what business is it of ours to provide timber for the next generation"; you can make the same reply that has been made to me many times by managers of wood lands department, "What do I care about this, my job is to get wood as long as I am working for this company and when my successor comes along, let him face the problems that are created by the way I am logging today."

I have even heard managers of companies talk in that way, but gentlemen, today we are coming to realize that we cannot shirk the responsibility of the next ten or fifteen or twenty-five years. We have no right today to create a set of conditions which are going to be difficult for our successors. It is not honest; it is not good citizenship; it is not good business.

The paper and pulp industry is, to a great extent, a stabilized industry which in all human probability ought to go on for generations. The mills and the tremendous installations which we have today should not be scrapped in ten or fifteen or twenty-five years, they ought to go on functioning for several generations to come and people who own woodlands certainly have responsibility to see that those woodlands are kept in productive condition.

Now I am not talking about anything sentimental and I am not talking about anything theoretical, I am talking about practical questions, questions which must be met in a practical way and solved in the very best manner possible, and I think that when we come to study these questions out, when the people who are operating think about what the conditions are in the woods, and when the men who are interested in getting out the timber realize that the forest, after all, is nothing but a great big garden, and that if you are going to operate it profitably you cannot leave it to take care of itself any more than you can leave your garden to seed itself over to the next spring and expect to have a decent crop of vegetables nor any more than you can leave your farm to take care of itself and then get good crops.

You have got to face the problem that your forest is

a living, growing organism which if properly handled will yield to you the same amount of wood year in and year out just as long as you care to take care of it. Now once we realize that proposition and once that comes home to the practical men who are in charge of mills and woods operations, we are going to see the whole problem solved and solved very rapidly, and I have the greatest hope and the greatest faith that this is going to come about and come about very rapidly.

I just want to say one word about this magnificent program which the American Pulp and Paper Association have laid out for a national forest policy. I think it is wonderful that every one has been able to get together and agree to this policy, but there seems to me to be a little element of "Let George do it." We are putting this thing up to the Government. We say the Government must do this; the Government must appropriate money; the Government must enact legislation for forest protection, etc., but don't you realize that we are never going to get anywhere unless every man who owns timber, who is interested in the management of timber, does these things for himself first, and then the Government end of it will take care of itself. Unless we begin to do our own work; unless we have fire protection and reforestation on our own lands, we are not going to get anywhere, and unless we take this matter to heart and practice what we are preaching to the Government and what we are preaching to the public, we are not going to get very far with our scheme.

#### SUCCESSFUL MEN HAVE STUDIED.

About four years ago B. C. Forbes gathered material for his book, "Men Who Are Making America." He selected 50 men as characters for his publication. In his research he learned that 24 of the men were born poor; 17 of the men were born in moderate circumstances; the remaining nine were born rich.

Biographies of the lives of the 24 men of poor parents show that most of them, practically all of them studied at night. They were forced to work for their livelihood during the day and at night they prepared themselves for advancement.

The men have excelled in various lines of business; banking, automobile, steel and kindred industries; in fact, all sorts of lines.

So doesn't it prove the value of studying at night; of taking some well directed course in order to prepare one's self for the job higher up?

The research also shows that the men born of poor parents studied at night, while those of the rich parentage gained their learning in the class rooms of college.

Thus it proves that, rich or poor, one must study to advance.

If you haven't the opportunity of going to college, you have the opportunity of the night schools!

You have the same chance as the other fellow. Are you going to allow him to look upon you from an advanced position while you are working at the same job ten years hence, or are you going to do the looking?

Your chance is now. Grab it.

They say you can lead a horse to water but you can't make him drink. 'Tis so with many workmen—we can lead them to the trough of Safety but they refuse to drink, but they will sooner or later wish that they had taken on a camel's supply.

**AIR MAPS FOR WIRELESS PATROL REPORTS.**

(From the Canadian Forestry Magazine.)

In prefacing this article, it may be stated that the following method of map squaring has been adopted by the Forestry Branch, Provincial Government, Quebec, and several large paper and lumber companies who operate aerial surveys and fire patrols of their respective timber limits.

Maps to be used are standard topographical maps, scale 500 or 7.8 miles to 1 inch. These maps can be obtained from the Department of Interior at Ottawa, and are published in sheets, which can, of course, be joined up to make one large map of any given territory, and each sheet is given a distinctive reference number. Key to these sheet numbers can also be obtained at Ottawa. To proceed with the actual squaring of these each sheet is divided into 9 squares, every degree of latitude into 9 squares, every degree of latitude and longitude forming a square, and numbered from top left-hand corner 1 to 9. Each of these 9 squares is subdivided into 6 squares, which are lettered "A" to "F"; the sheet is now divided into a total of 54 squares.

Proceeding along the same lines, in the process of reduction, each of the squares lettered "A" to "F" is divided into 36 squares, and numbered from top left-hand corner 1 to 36. Again, using the same method of reduction, the last mentioned squares are divided into 4 and lettered a, b, c, d, in small letters. The final reduction of squares is arrived at by dividing each of the latter squares a, b, c, d, into 100, but as the squares are not very small, graduations of 10ths are placed on two sides of the squares, these graduations serving as a scale or protractor applicable to any square. It is just a matter of measuring latitudinally and longitudinally to any given point in square to locate same on map.

It may be here mentioned that care must be taken when squaring maps, to divide each square separately in order to follow curvature and variation of latitudinal and longitudinal lines. The accompanying photograph will serve to illustrate the method more clearly.

Suppose an aerial patrol, in reporting an outbreak of fire, sends in by wireless to the nearest station a message as follows:—"Fire 34-la-2b-5-4, you simply look up sheet 34, square la, 2b, scale latitudinally 5 graduations and longitudinally 4 graduations pin point the intersection of these lines, and you have as near the exact location as possible. Of course, it will be readily understood that fire location will be more easily discovered by airmen.

By aerial photography, as used in mapping out the war zone in France and Belgium, mosaic maps will be made, and will prove invaluable in correcting positions of lakes, rivers, etc., in unsurveyed territories, but the whole operation depends upon accurate squaring of maps not only as a guide to the airmen, but in compiling and joining up of mosaic maps. This method of making maps, etc., is as yet in its experimental stage in regard to Canada, but there seems to be no reason why it cannot be made a success, given the right men to do this work. However, this season, it is hoped, will produce results which will be awaited with great interest by many private companies.

Referring to fire patrol by airplane, immediately a fire is reported by the airman and location given the Fire Protection Association is notified; they record same and despatch men to fight the fire. Direction of such forest fires should be observed and

reported on from time to time, and fire fighters guided as to best means to combat same.

Conventional signs denoting location of the air harbour, aerodromes, supply stations, etc., will be marked on the mosaic maps as soon as same are definitely located.

**DISAGREES ON ESPARTO.**

The Editor, Pulp and Paper Magazine of Canada,

Dear Sirs,

In your issue of October 7th, Technical Section, you have a paragraph marked "K 6," dealing with the rational treatment of esparto.

We think some of the Scotch Canadians would have quite a huge laugh over this particular article, and rather than allow your readers to remain under a false impression, we must flatly contradict practically the whole of it.

In the first place, we are quite aware the yield of esparto is low, but we are not aware that 12-14 per cent of the cellulose is lost, seeing dry esparto is not wholly cellulose.

Secondly you say short soft fibre lacking strength, which is wrong as everyone knows, who has treated esparto.

Thirdly excessive formation of lumps on the machine, which is absolutely ridiculous, being no more apparent in esparto paper than in wood fibre papers, which have come under my knowledge, and I have dealt with most of the known fibres of to-day.

Fourthly you say it bleaches to a dull yellowish white and requires 12 per cent of bleach — wrong again! Spanish esparto bleaches pure white, only the lower grades are in a way creamy, and the consumption of bleach is certainly nothing approaching 12 per cent with a modern plant. Some mills, to my knowledge, are bleaching with 8 lbs. per cwt.

Fifthly, it causes fuzzing of the sheet at the couch roll, whatever this means one can only guess, but you can take it from one who has been 25 years at the game, there is no more trouble with esparto here, than there is with wood or rag papers — in fact less.

Sixthly, you say its cost is high, to-day one is able to manufacture esparto into paper much more cheaply than any easy bleaching sulphite on the market.

The last portion of the article is just a little more silly than the earlier part of it. Possibly the whole thing has been written with a view to drawing information, but that does not matter, one simply cannot allow a misleading statement like this to appear in any paper like yours.

Yours faithfully,

SCOTS WHA HAE.

P.S.—The average yield of esparto varies from 44 per cent to 50 per cent.

What is the yield of wood pulp in the raw state up to the finished article of Paper.

NOTE.—There should be an average at least one letter a week, discussing articles in the Pulp and Paper Magazine. Our paper is an open convention where anyone may have the floor. We thank our fellow Scotsman for his frankness. He should be more specific, however, as to what kind of wood pulp he is asking about.—Ed.

A compromise is an arrangement by which both the bird and worm would be late.



# A Census of the Pulp and Paper Industry of Canada

From a Census of the Industry for 1918 Prepared by  
the Dominion Bureau of Statistics, R. H.  
Coats, Dominion Statistician.

That the expansion of the pulp and paper industry in Canada continues is shown by a comparison of the statistics for the calendar year 1918 with those of the year 1917, as presented in the present report.

The number of mills operating in 1917 was 83 with a production of \$96,340,327. In 1918 the number of active mills had risen to 94 and the volume of production to \$119,309,434, an increase in the number of active mills of 11, or 13.25 per cent, and in production of \$22,969,107, or an increase of 23.84 per cent.

The consumption of pulpwood in 1918 was 2,210,744 cords, as compared with 2,104,334 cords in 1917, or an increase for the year of 5 per cent. The total cut of pulpwood for manufacture and for export which in 1917 was 3,122,188 cords increased to 3,560,280 cords in 1918. The quantity cut for export rose from 1,017,854 cords in 1917 to 1,349,536 cords in 1918, an increase of 331,682 cords or 32.50 per cent.

Capital investment in the pulp and paper industry is another measure of its growth.

## Capital Investment.

The total capital invested in the industry, in 1918, was \$241,344,704 of which \$12,520,765 was invested in paper mills, \$71,708,223 in pulp mills and \$157,115,716 in pulp and paper mills. Classified by items of capital, land, buildings and fixtures amounted to \$118,805,581, machinery and tools to \$60,627,266, materials on hand, stocks in process, etc., \$39,632,078 and cash, trading and operating accounts and bills receivable to \$22,259,779. By provinces, the amount invested was British Columbia \$42,705,988; Ontario, \$88,576,807; Quebec, \$101,456,296; New Brunswick \$7,852,225 and Nova Scotia \$753,388.

The increase in the total capital investment, as shown in the bulletin for 1917 for the two year period, 1915-1917, was 39.6 per cent. or an annual average of 19.8. The increase for 1918 was 29.21 per cent. or an increase of almost 10 per cent. over the annual average for the preceding year.

Salaries and wages rose from \$20,358,019 in 1917 to \$26,974,225 in 1918, an increase of \$6,616,206, or 32.5 per cent. The number of persons employed on salary increased from 1,563 in 1917 to 1,929 in 1918, or a percentage increase of 23.41. The average number of persons working for wages which in 1917 was 21,402 increased during the year 1918 to 23,934 or 11.83 per cent.

The number of persons employed in paper mills was 1,775 male and 531 females with payments of \$2,050,615; in pulp mills the number was 7,328 males and 105 females with payment of \$7,508,834; and in pulp and paper mills 15,609 males and 515 females with payment of \$17,414,776.

**Woodpulp.**—The production of woodpulp in the Dominion for the calendar year 1918 in all classes of mills amounted to 1,557,193 tons, as compared with 1,464,308 tons in 1917 and 1,296,084 tons in 1916. Of the 1918 product 820,584 tons were used by the producing mills in the manufacture of paper and 736,609 tons were made for sale. The amount received for pulp sold was \$41,302,882 or an average price per ton

for all classes of pulp of \$56.07. The quantity and value of each kind of pulp made for sale is given in the following summary:

Kinds of Pulp	Quantity,	
	Tons	Value
Ground wood pulp . . . . .	273,180	\$ 7,133,711
Sulphite fibre . . . . .	318,882	22,464,063
Sulphate fibre . . . . .	144,547	11,705,108
Totals . . . . .	736,609	\$41,302,882

There is also an item "miscellaneous products" amounting to \$1,305,639, which is made up of sawn lumber and certain by-products of the industry.

The quantity and value of materials used in the manufacture of wood pulp, by kinds of wood were:—

	Cords	
	Cords	Value
Spruce . . . . .	1,638,733	18,887,125
Balsam . . . . .	447,243	4,604,987
Hemlock . . . . .	89,007	1,038,867
Poplar . . . . .	9,885	100,987
Jack Pine . . . . .	25,851	254,384
All other . . . . .	25	125

Totals . . . . .	2,210,744	24,886,475
Other materials used . . . . .		4,938,667
Total cost of wood pulp materials . . . . .		29,825,142

The newsprint group which in 1917 accounted for 50.5 per cent. of the total tonnage and 62.4 per cent. of the total value fell in 1918 to 75.93 per cent. of the tonnage but shows a small increase in per cent. of total value, being 63.22. Book and writing paper which were 5.6 per cent. of the tonnage and 14.9 per cent. of the value in 1917 fell to 4.97 per cent. of the tonnage and 14.68 per cent. of the value in 1918. The other groups show increases in tonnage and value over 1917, the percentages for 1918 being as follows: wrapping papers which in 1917 were 5.9 per cent. of the total tonnage and 9.1 per cent. of the total value rose in 1918 to 6.32 per cent. of tonnage and 10.04 per cent. of value; boards which in 1917 were .3 per cent. of tonnage and 5.7 per cent. of value rose in 1918 to 9.07 per cent. of tonnage and 7.59 per cent. of value; other paper products which were in 1917 1.3 per cent. in tonnage and 2.4 per cent. of value rose to 3.71 per cent. and 4.47 per cent. for tonnage and value respectively in 1918.

The average value per ton of newsprint paper rose from \$56.35 in 1917 to \$62.91 in 1918, an advance of \$6.56 per ton or 11.64 per cent.; book and writing paper rose from \$193.40 per ton in 1917 to \$222.90 per ton in 1918, an advance of \$29.50 per ton or 15.25 per cent.; wrapping papers rose from \$112.12 per ton in 1917 to \$119.99 per ton in 1918, an advance of \$7.87 per ton or 7.02 per cent. Boards on the other hand show a decline from \$65.50 per ton in 1917 to \$63.26 per ton in 1918, a decrease per ton of \$2.24 or 3.42 per cent.; other paper products also show a decrease having fallen from \$132.06 per ton in 1917 to \$91.11 per ton in 1918, a marked decline of \$40.95 per ton or 31 per cent.

The number of mills engaged in the production of paper is shown by classes, as follows: Newsprint, 23 mills; book and writing paper, 16 mills; wrapping paper, 16 mills; boards, 13 mills and other paper products 18 mills.

**Materials used in the Manufacture of Woodpulp.**—The consumption of pulpwood in all mills making pulp, whether purchased or cut from own limits in 1918 was 2,210,744 cords of the value of \$24,886,475, as compared with 2,104,334 cords of the value of \$18,817,483 in 1917. The average price per cord was \$8.94 in 1917 and \$11.25 in 1918, being an increase per cord over the previous year of 25.83 per cent.

The production of paper by provinces is summarized in the following table by tonnage and value:

	British Columbia	Ontario	Quebec	Canada
Newsprint . . . . .	113,142	325,023	296,618	734,783
“ “ . . . . .	\$7,576,711	\$20,673,268	\$17,980,835	\$46,230,814
Book and writing paper . . . . .	“ “ “ “	30,989	17,161	48,150
“ “ “ “ . . . . .	“ “ “ “	\$ 6,319,007	\$ 4,413,800	\$10,732,807
Wrapping paper . . . . .	9,374	12,388	39,418	61,180
“ “ . . . . .	\$1,244,504	\$ 1,330,316	\$ 4,766,552	\$ 7,341,372
Boards . . . . .	“ “ “ “	51,922	35,827	87,749
“ “ . . . . .	“ “ “ “	\$ 2,810,527	\$ 2,740,882	\$ 5,551,409
Other paper products . . . . .	“ “ “ “	4,906	30,956	35,862
“ “ “ “ . . . . .	“ “ “ “	\$ 735,840	\$ 2,531,302	\$ 3,267,142
Other products (value only) . . . . .	\$ 442,990	\$ 1,399,811	\$ 1,734,568	\$ 3,577,969
Total (paper tonnage) . . . . .	122,516	425,228	419,980	967,724
Total (value all products) . . . . .	\$9,264,205	\$33,268,769	\$34,167,939	\$76,700,913

Pulpwood consumption in the provinces continues to occupy the same order as in the reports for previous years. Quebec leading with 1,085,478 cords, Ontario being second with 784,691 cords, British Columbia third with 218,774 cords, New Brunswick fourth with 110,133 cords and Nova Scotia fifth with 11,668 cords. The quantity of pulpwood consumed shows an increase in each of the provinces except Nova Scotia, where the decrease amounted to 6,706 cords.

Spruce with 1,638,733 cords continues to lead all classes of wood in the production of pulp, being 74.12 per cent. of the total consumption of all woods. Balsam Fir is next in order with 447,243 cords or 20.23 per cent., hemlock with 89,007 cords or 4.03 per cent., Jack pine with 25,851 cords or 1.17 per cent., poplar with 9,885 cords or .45 per cent., and all other woods with 25 cords and an inappreciable percentage. Spruce and hemlock show slight decreases in the quantity used as compared with 1917, while the principal remaining woods show increases. The disappearance of tamarack and larch in 1918 is due to the improper naming of these woods in certain districts.

Spruce was reported as used in 57 mills, balsam fir in 35 mills, hemlock in 7 mills, poplar in 8 mills and Jack pine in 2 mills.

For the first time in the history of the industry the quantity of wood used in the manufacture of sulphite pulp exceeds that used in the production of ground wood, the figures for 1918 being 1,041,697 cords and 73,081 cords respectively. The percentage of wood used in the various processes in 1918 were for mechanical or ground wood pulp 39.50 per cent., for sulphite fibre, 17.25 per cent., for sulphate fibre 12.90 per cent. and for soda fibre, 35 per cent. or a total of 60.50 per cent. for the chemical process, as compared with 39.50 per cent. for the mechanical process. The increase in the proportion of wood used in the manufacture of pulp

by the chemical processes does not represent an equal increase in the production of pulp by these methods.

The quantity of pulp produced per cord of wood in the provinces varies considerably in each of the processes. British Columbia is highest in the production of pulp by the mechanical process, averaging 2,485 pounds per cord. Quebec is next with 2,078 pounds, Ontario third with 1,917 pounds, New Brunswick fourth with 1,893 pounds and Nova Scotia fifth with 1,825 pounds. In the sulphite process British Columbia again leads with an average production of 1,059 pounds per cord, followed by New Brunswick with 1,046 pounds, Quebec with 1,042 and Ontario with 1,002 pounds. In the sulphate process Ontario is first with 1,176 pounds per cord, British Columbia second with

1,163 pounds per cord, Quebec third with 1,145 pounds and New Brunswick fourth with 1,050 pounds. Ontario and Quebec are the only provinces producing pulp by the soda process, the quantity per cord being 1,000 pounds and 961 pounds respectively.

The value of the wood used in the various processes rose from \$8.94 in 1917 to \$11.26 in 1918, an increase of \$2.32 per cord or 26 per cent.

The value of wood used in the mechanical process rose from \$8.07 in 1917 to \$11.40 in 1918 or 41 per cent. In the sulphite process the rise is less marked as only the higher grades are used, the prices being \$10.18 per cord in 1917 as compared with \$11.64 in 1918, an increase of about 14.5 per cent. The value of wood in the sulphate process rose from \$8.10 per cord in 1917 to \$9.41 per cord in 1918 or 16.2 per cent. By the soda process the increase was from \$10.07 per cord in 1917 to \$11.23 per cord in 1918 or nearly 11.5 per cent.

The value of all other materials used in the manufacture of wood pulp amounts to \$4,938,667, as compared with a total cost of \$1,602,212 in 1917. The items comprising this total were sulphur, 58,950 tons valued at \$1,830,319; limestone and lime, 127,014 tons valued at \$729,793, sulphate of soda, 20,495 tons valued at \$522,423; soda ash, 3,708 tons valued at \$159,430, bleach, 3,061 tons valued at \$140,287, and all other miscellaneous materials for which quantities were not specified valued at \$1,556,415.

The total capacity of mills making ground wood pulp in the Dominion in 1918 was 1,146,154 tons dry weight, of which the mills in the province of Quebec reported a total capacity of 620,784 tons or 54.16 per cent. of the capacity of the Dominion. Ontario mills had a capacity of 382,270 tons or 33.35 per cent. British Columbia mills of 103,600 tons or 9.04 per cent. Nova Scotia mills of 31,500 tons or 2.75 per cent. and New Brunswick mills of 8,000 tons or .70 per cent.

The actual output of ground wood pulp in the Dominion during the year was 879,510 tons or 76.74 per cent. of the total capacity. In Quebec the actual output of ground wood pulp was 493,520 tons or 79.50 per cent. of full capacity; in Ontario the actual output was 277,922 tons or 72.70 per cent. of full capacity; in British Columbia the actual output was 91,588 tons or 88.40 per cent. of full capacity; in New Brunswick the actual output was 6,463 tons or 80.80 per cent. of full capacity and in Nova Scotia the total actual output was 10,017 tons or 31.80 per cent. of full capacity.

In the equipment in mills making chemical pulp by the various processes sulphite pulp occupies the first place with a yearly capacity of 613,477 tons and an actual output of 494,322 tons or 80 per cent. of the full capacity. The sulphate process is next with a yearly capacity of 191,620 tons and an actual output of 179,600 tons or about 94 per cent. of full capacity and the soda process last with a yearly capacity of 5,600 tons and an actual output of 3,761 tons or 67 per cent of full capacity.

A summary table for the Dominion showing the quantities and values of the principal materials used in the manufacture of paper in 1918 follows:—

	Quantity Tons	Cost Value at Mill
Ground wood pulp . . . . .	679,395	\$14,215,895
Sulphite fibre . . . . .	242,685	13,665,361
Sulphate fibre . . . . .	35,587	2,260,443
Soda fibre . . . . .	4,775	397,621
Other chemical fibre . . . . .	2,419	219,654
Rags . . . . .	20,138	1,412,367
Oil or waste paper . . . . .	46,350	1,320,338
All other paper stock . . . . .	8,764	634,149
Soda ash . . . . .	968	47,280
Alum . . . . .	8,382	375,366
Clay . . . . .	9,212	217,922
All other materials (value only) . . . . .		2,782,940
Total cost of materials . . . . .		\$37,549,936

The total cost of materials in 1917 was \$28,617,334 and in 1918, \$37,549,936, an increase of \$8,932,002, or 31.2 per cent.

**Fuel Consumption**—The total cost of all fuel used in the industry, for the year ending December 31st, 1918, was \$10,191,084, of which bituminous coal accounted for \$9,151,522, or about 90 per cent. of the entire fuel cost.

The quantity and value of fuel used in the industry by classes, are given below:—

Kind	Origin			
	Canadian		Foreign	
	Quantity	Value	Quantity	Value
Bituminous coal, slack . . . . .	11,388	84,832	212,938	1,650,681
Bituminous coal, lump . . . . .	2,972	30,711	255,960	1,880,230
Bituminous coal, run of mine . . . . .	128,979	1,981,579	399,362	3,523,480
Lignite coal . . . . .	788	7,410	43	833
Anthracite coal, lump . . . . .			162	1,762
Anthracite coal, dust . . . . .			12,174	90,090
Coke . . . . .			36	676
	Gals.			
Gasoline . . . . .	91,451	22,002		
Oil fuel . . . . .	1,820	373	13,947,600	519,390
Wood (cords) . . . . .	53,296	356,753		
Other fuel (not specified) . . . . .		17,914		22,539
Total fuel . . . . .		2,501,394		7,689,690

**Capital**—The report shows the distribution of capital under four heads (a) land, buildings and fixtures, (b) machinery and tools, (c) materials on hand, stocks in process, finished products on hand, fuel and miscellaneous supplies and (d) cash, trading and operating accounts and bills receivable.

#### Miscellaneous expenses.

The total cost of miscellaneous expenses for the year amounted to \$13,425,547, and comprised the following principal items:—

Rent of offices, works and machinery . . . . .	\$ 268,224
Rent of power . . . . .	1,429,873
Insurance (premiums only) . . . . .	694,510
Taxes (internal revenue, war, etc) . . . . .	872,880
Taxes (provincial, municipal, etc.) . . . . .	700,680
Royalties, use of patents, etc. . . . .	12,181
Advertising expenses . . . . .	60,301
Travelling expenses . . . . .	362,178
Ordinary repairs to buildings and machinery . . . . .	3,116,042
All other miscellaneous expenses . . . . .	5,908,678

#### THE THIRD THING.

There are two sources of wealth, to employer and employe alike: One is interest on money invested, and the other is reward for energy and ability put into work. If you have a Liberty Bond, it's money invested. The interest is the reward. In working, the reward or the pay will sooner or later come in direct proportion as energy and ability are put into it.

This holds for employer, too. He has capital and business ability. One without the other is worth nothing.

There's a third thing, and employer and employe have this thing together, or the works are gummed. It's Co-operation. Take out the Co-op of labor, and business won't succeed. Take out the Co-op of business, and labor won't succeed.

Some fellows feel they don't get their share of pay and advancement. Do they deserve it? Do they earn more than they're paid for. If they do, they should have it and the boss will be glad to give it to them if they will show him.

If they are not earning their pay, some one is losing — either the boss or the other employes. In any case, it's an injustice that some day will come back where it started from.

It's a Ten to One shot that the boss is trying to give a fair deal, and that if he isn't all he needs to know is that his employes are giving him one. If they are, and a little more, they'll get that reward—more pay and better jobs.—Babson Institute.

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## Practical Training for Foresters

### Three Quarters of Total Time of Attendance Is Spent In Field and Laboratory.

(Continued from last issue.)

As has been pointed out in preceding articles, the students in all forestry schools gain practical experience in the bush, forest nursery or mill during the summer holidays and at the same time earn money for the partial payment of their school expenses. The total time thus employed during the three summer vacations of the course amounts to ten or twelve months. Thus quite or more than one quarter of the time during the course is actually given to woods work. While the school is in session the students' time is about equally divided between attendance upon classroom lectures and upon laboratory or field work. It will be seen, therefore, that during the entire four years of the course the students spend three quarters or more of their time in practical work in some form.

#### In the Practice Camps.

The statement in the paragraph above includes the work in addition to their time spent in the practice camp, since the students of all the forestry schools spend from one to three months in the forest under the direct supervision of their instructors. At this time they put into practice as far as possible the things they have learned in their textbooks. In the first place, they usually lay off the boundaries of their practice area and divide it into working sections. The students construct a map showing twenty-five or fifty or one hundred foot contour intervals. This of course, discloses the topography and drainage and thus indicates where the hauling roads and camps may be conveniently located. The next procedure is to make a forest type map which locates, for example, the pure stands of hardwoods and softwoods and the mixed stands of these species. It also shows the distribution of the barrens, burns, swales and muskegs if present. The students then estimate the timber on the tract in terms of board feet or cords for each commercial species. This is usually done by establishing a base line and measuring the trees in parallel stripes at definite intervals apart and perpendicular to the base line. The stripes on which the trees are measured are run methodically on the tract, so that the final estimate of the stands is a fair average. The students, however, obtain practice in various other methods of estimating as employed in the different parts of the country.

#### Planning the Future.

All this data is placed upon the map of the tract so that one may see clearly the topography and drainage the location of the logging roads and camps, the nature of the forest types and stands and the amount of material that may be cut in the form of saw logs, pulpwood or cordwood. These are about all the facts with regard to the condition of an area that a lumberman needs for the purpose of logging, but the forester must enter into the condition of the future productiveness of the area, for it is his business to maintain the continuity of the crop. In order to find out the condition of the tract from this standpoint, he must do two things: he must determine the amount of material not yet of merchantable size and having done this he must determine how fast it is growing, or in other words, how much wood in board feet in addition to estimating the amount of material now merchantable on the practice area. The forestry students by means of the data

obtained from regeneration and growth study surveys make estimates of the probable yield at stated intervals in the future. This involves not only a stocktaking of the young growth, but also the determination of the probable death rate as the stands pass from youth to maturity and this in turn involves, among other things, the making of forest disease surveys.

In order to keep an area continuously productive, provision must be made for the reproduction of the merchantable species at frequent intervals. The natural mortality is very large in a forest and, therefore, there must be an abundance of young trees coming on if the continuity of production is to be preserved. The natural regeneration of the forest is precarious and uncertain and the necessary conditions are not well understood. Yet the study of such conditions forms an interesting and very important part in the formation of plans for an unending supply of pine saw logs or spruce pulpwood as the case may be.

#### Studies of Fire Protection.

There is little need of making plans for the future supply of timber on an area if, as is unfortunately the case in some of our best timbered regions, the area has practically no chance of escaping destructive fires. An essential part of the forestry students' work in the practice camp is to work out the details of an adequate system of fire protection. This includes the locating and building of trails and telephone lines.

The work outlined in the preceding paragraphs covers the main things accomplished by forestry students in a practice camp. In the end they have the knowledge and the data necessary for the making of working plans for the tract, plans that extend a long way into the future and if carried out by the owners of the land would result in a supply of saw logs or pulpwood so long as the sun shines and the rain falls, for wood is only solidified sunshine and water with a few mineral salts from the soil thrown in for seasoning. The forester uses his intelligence to direct these processes of nature. Under a let-alone, do-nothing policy there is no direction and there will be no future supply—at least sufficient to meet the present demands on the present commercially valuable species.

#### The Character Equation.

In concluding the outline of under-graduate courses in forestry, the writer wishes to say that in his belief no forestry school can make a trained forester. That comes only with experience accompanied with discriminating judgment. The forestry school does, however, attempt to train the mind of the student so he can use it to his advantage and that of his employer in whatever circumstances he may be placed. To develop in the student an active resourceful mind and the capacity for sustained intelligent thought and persistent hard work is the goal toward which the forestry schools constantly strive. A forester can be made only in the forest. It is the function of the teacher to point the way, to lay the foundations. What way he takes, what he builds on those foundations depends very largely upon the man himself.

The American Writing Paper Company has recently announced the appointment of Mr. M. Hazen Chase as Assistant to Mr. R. R. Campbell, Vice President, in charge of manufacturing. For the past five years, Mr. Chase has been office manager and assistant to the superintendent of the Copsecook Mill of the S. D. Warren Company located at Gardner, Maine.

### CANADIAN WINNERS.

The Pusey and Jones Co., manufacturers of Paper Machines at Wilmington Del., offered six prizes amounting in all to \$500 for articles or essays dealing with the question of whether it was more profitable to operate a two-roll machine—158 in. wire—at 1000 ft. per minute, or a three-roll—234 in wire—at 600 ft. per minute.

It is gratifying to note that of the six prizes, three were awarded to Canadians; Albert J. Davies of the Research Department and Peter Smith, boss machinist, both with the Spanish River Pulp and Paper Mills won the second and sixth prizes while B. C. Guild of Thorold, Ontario, won the fourth. Canadians may well be proud of this result.

The subject of these essays was the principal topic of discussion at the last annual meeting of the Technical Section of the Canadian Pulp and Paper Association. It is interesting to note that these essayists favor the wide machines, perhaps because none of them, apparently, has had any experience with speed.

### W. F. MACLEAN ATTACKS PAPER MAKERS.

What might almost be termed a characteristic misrepresentation of the relations between Canadian newsprint manufacturers and their domestic (though sometimes wild) customers occurred at a hearing before the Tariff Commission in Toronto, last week. The Commission has the verbatim account; the following is necessarily a newspaper report of Mr. Maclean's remarks. It reads:

An unexpected attack on the news-paper print manufacturers was made by W. F. Maclean, M.P., for many years publisher of the Toronto World, who claimed there had been an absolute breach of faith between them and the Government. He had waited for some time to give his facts, he said, and he would give them in the Dominion House of Commons.

He alleged a scandalous condition in connection with newsprint manufacturers who were even soliciting trade now in Sweden and Finland. The newsprint manufacturers would have to treat Canadian publishers decently. Above all, the practice of watering their stock must be prohibited or regulated. "Regulation of price is a corollary of the tariff law in this country," declared Mr. Maclean.

Instead, he had been treated abominably, he said. A company whose customer he had been for years, and to whom he had paid out over a million dollars, and owed not a cent, had told him it did not want his business. His son had been ill for months as a result of following shipments of paper in automobiles, and of paying extra money to unload it in time to continue publication. "The preference was going to out-and-out free traders," said Mr. Maclean. "Here are news-paper manufacturers enjoying the protection of the Canadian tariff and saying: 'Go away from us, we don't want your business, we're going to supply the American publishers.' Yet these manufacturers are making their product from public lands, from the water-power that belongs to the Canadian people and are protected by the tariff. We are getting our paper at four or five prices in this country, and all agreements made with the Government have been broken. If the paper manufacturers are to have the protection of the duty which bans outside paper, then it follows that in times of stress, they must have their prices regulated and supply the home market first of all.

"I say it is infamous, also," said Mr. Maclean, "that they have no par value stock, and that the tariff should be used to pay interest on their watered issues. These men who have refused to give me paper have watered their stock four or five times, and they are asking the inventors of Canada to take these shares, cut up five times, while saying there is no par value, yet they say they've got to pay five per cent. on it. I as a protectionist, say that the time has come when they must be regulated." The manufacturers had just announced they would make the price six cents for the beginning of the new year. It ought to be five cents, even four cents or three cents," declared Mr. Maclean.

### Papermakers Reply.

So entirely misrepresentative is the above, that the secretary of the Canadian Pulp and Paper Association at once sent the following telegram:

December 2, 1920.

Sir Henry Drayton,

Chairman, Government Committee on Tariff,

City Hall,

Toronto, Ont.

If the statements attributed to W. F. Maclean, M.P., before your committee, in respect to the newsprint manufacturers, were as reported in the public press they are wholly erroneous and could only have been based on ignorance of the facts or inspired by malice. The newsprint manufacturers have not broken faith with the Government, they are not soliciting and never have solicited trade in Sweden, Finland or any other country to the detriment of their home market, nor done the other things alleged by Mr. Maclean. Mr. Maclean's inference that it is impossible for him to get a supply of paper is unwarranted and not in accordance with the facts. His further statement that "regulation of price is a corollary of the tariff law in this country" carries its own refutation, but the paper manufacturers might have less objection to having their prices regulated if price regulation were applied indiscriminately to every commodity affected by the tariff. If you will instruct the secretary of your committee to supply this association with an official copy of Mr. Maclean's statement we shall be glad formally to refute it and to supply your committee with proof of its falsity. In any event we trust the committee will give this denial publicity equal to that given Mr. Maclean's biased and untrue remarks.

CANADIAN PULP & PAPER ASSOCIATION

A. L. DAWE,

Secretary.

### REALLY CRIMINAL PULP MAKERS.

The Toronto World quote an unnamed U.F.O. member. The Toronto World quotes an unnamed U.F.O. member may start a big pulp and paper mill in Northern Ontario, with the double purpose of experimenting in economic working of the Government timber limits and of concentrating in one model town all the jail inmates of the province, particularly offenders against the Ontario Temperance Act, and employing them in cutting and hauling the pulpwood and in work in the pulp and paper plants. These men, according to the World's authority, would be paid good wages for their work, be housed and fed as model prisoners, and treated as workmen, not as prisoners.

### WANT DUTY ON PUBLICATIONS.

The case of the Canadian magazine and periodical publishers in relation to the Government's fiscal policy, was presented by a delegation from the Toronto magazine publishers at a session of the Dominion Tariff Commission in Toronto last week.

It was pointed out that the value of importations of various magazine publications on which no duty was paid increased from \$881,621 in 1912 to \$2,010,310 in 1919. Duty on imported book paper is twenty-five per cent. If the same rate of duty was imposed on the printed product of foreign magazines and periodicals brought into Canada, the revenue to the Department of Customs would be increased very considerably. If the twenty-five per cent duty were applied on the value of raw paper in these foreign publications coming into Canada, this, in itself, would tend to relieve the competitive disadvantage under which Canadian publishers are laboring.

The Commission was told that there was no other class of manufacturers in Canada laboring under the same handicap as the Canadian Publishers of magazines and periodicals. "In a competitive paper market," it was stated, "we would have to pay Canadian paper makers the United States price, plus the duty, so that we pay the duty whether we buy domestic paper or bring it in from the United States. We also pay duty—or a price equal to the United States price, plus duty—on engravings, ink, art work and other material entering into the manufacture of magazines and periodicals. The United States publications which have circulations in the United States ranging from 500,000 to 2,000,000 copies per issue, can quite easily run off another five or ten thousand copies for the Canadian market with very little extra expense, except for the cost of material and labor, their overhead having been already absorbed by circulation at home. This extra run for the Canadian market is dumped into Canada by freight or express absolutely free of duty. The above conditions make it advantageous for the Canadian publishers to establish a plant in Buffalo or Detroit and employ United States labor to print their magazines, use material such as paper, ink and engravings made in the United States, and ship their publications into Canada to be mailed here through the post office, thus robbing Canadian labor of its rights and the Government of the duty on unprinted paper or in other words we could bring in carloads more of printed magazines, duty free, and on the same train a carload of blank paper would be dutiable. We ask that you give consideration to some measure of protection for this industry which will allow it to develop and employ Canadian labor in producing these magazines and periodicals and to materials which enter into their production."

In speaking of Canadian magazines as a necessary national institution the delegation pointed out that the heavy influx of United States magazines is doing much to denationalize, if not really Americanize the Canadian people. It was stated that during the past few years the Government carried on several advertising campaigns for various purposes and the publications in the Canadian Association gave every possible assistance in these campaigns through their editorial columns. No aid is given the Canadian Government by United States magazines and periodicals in these matters, yet these publishers receive preferred treatment from our Government

Suggestions offered were as follows:

1. A specific duty of at least 6c. per pound on all American magazines and periodicals coming into Canada by mail, freight or express without allowance for unsold copies returned to the United States. This would give some measure of relief and bring a large amount of revenue to the Department of Customs and at the same time eliminate some of the undesirable publications which are at present glutting the news stands.

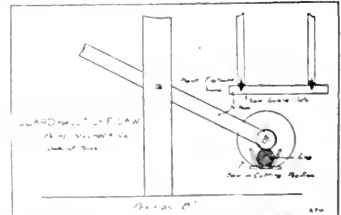
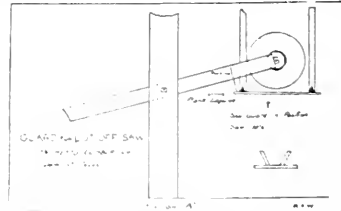
2.—Or we might suggest that an ad valorem duty of twenty-five per cent. (which is equivalent to the present duty on paper) be imposed on all foreign publications entering the Dominion whether sent by mail, freight or express. The revenue accruing to the Finance Department as the result of such duty would be extremely large. The duty would amount to from 3c. to 10c. on each copy of American magazines, which would in all probability amount to a total of half a million dollars per year, even if half of the magazines which are now coming from the United States are eliminated.

### A NEW SAW GUARD.

The drawings show an overhead log cut-off saw. These drawings were contributed by Mr. W. E. Black, superintendent of the Palmetto Lumber Co., Oakhurst, Texas. Mr. Black is entitled to much credit for the interest that he has shown in regard to safety work.

"A" shows saw up out of the way, with chains attached to safety board, which offers a space of 8 or 10 inches, 2 inches thick, immediately under the saw, thereby preventing any person from coming in contact with saw.

"B" shows saw in position cutting a log, and guard



(chains having relaxed when saw started down) hanging down edgewise out of the way of the saw.

Note.—Some time ago a workman at the Palmetto Lumber Company walked up the log haul. Not thinking, this workman walked into this log cut-off saw, cutting the skin off his forehead, and by a miracle missed his skull. Immediately after this accident the guard shown in the drawing was made and placed on the saw. I know many sawmills that have no protection on this saw. Don't be sorry. Act NOW. Place a guard on your log cut-off saw. SAFETY FIRST. — Common Sense.

## HYDRO ELECTRIC INSTALS STEAM ROSSING PLANT.

The Hydro Electric Power Commission of Ontario who operate a pulp mill at Campbellford, Ontario, are putting in a rossing plant at Baneroft, Ontario, from which place most of their wood is procured. Previous to this they simply had the logs cut into 2 ft. wood at Baneroft and loaded on cars for shipment to Campbellford, where it was barked on disc barkers, but now they intend to cut up the logs and bark them right at Baneroft. For this purpose they have recently placed orders with the William Hamilton Company of Peterboro for a complete barking outfit, including three strand log haul-up, eight-saw pulpwood slasher cutting the wood into 2 ft. lengths, and also an 8' x 30' barking drum on rollers, together with the necessary conveyors and transmission machinery. The power will be supplied by two 66" x 16' boilers, and 20" x 24" engine. This equipment will greatly increase the supply of barked wood for their pulp mill, and it is expected that they will be able to ship from six to eight cars of barked wood every day. The foundations for the machinery have already been laid, and it is expected that they will be ready to commence operations around the 1st of May.

## PAPER PROSPECTS IN BRITAIN.

The Pulp and Paper Magazine is indebted to H. M. Trade Commissioner in Montreal for the following quotation from the November Bulletin of the Department of Overseas Trade.

There has been no recent improvement in the position of the industry so far as actual business is concerned. It is true that the settlement of the labor questions, has, to that extent, improved the situation and removed one of the factors adverse to satisfactory development. Nevertheless, this is the only direction in which conditions have undergone any change for the better. Trade itself continues extremely dull, despite the fact that this is normally the commencement of the most active period of the year. Orders come in very slowly, and, as was the case last month, only those mills engaged in the production of specialties or high-grade goods can view their order books with equanimity.

Certainly the general industrial position is believed to be, to a very considerable degree, accountable for the stagnation existing, but, in addition, the financial situation plays no insignificant part in restricting trade.

Raw material prices continue high and in no case is there indication of easier rates, while in two instances, best grades of paper shavings and waste paper, prices have recently increased.

On the other hand, newsprint has, during the past few weeks, shown a distinctly easier tendency, and home manufactured paper is now selling at as low as 5d. per lb., while foreign print is quoted 5 3/4d. per lb. This is, however, believed to be the result of the release of stocks held by a number of small paper merchants who entered business during the war stringency, and are now compelled to sell at cut rates in order to realise upon their stocks. The opinion is expressed that this is only a temporary factor, and that, apart from its effects, there is nothing to indicate a continuance of these easier conditions.

Despite the fact that the unexpected duration of the slackness has tended somewhat to shake the confi-

dence with which the trade looked to an early revival of business, it is still generally believed that the settlement of the coal strike, following upon the agreement on its own labor matters, will mark the commencement of a return to more normal conditions of trade.

In the meantime, greater attention is being given to export matters, and an improvement in this direction is confidently expected.

## ABITIBI HAS A LIVE SCIENCE CLUB.

The Science Club composed of technical men and others of a scientific turn of mind at Iroquois Falls not only holds lively sessions for the discussion of a set program but recently held its annual dinner which was pronounced the best dinner ever served at the Falls. Mr. L. E. Kendall, the retiring president explained the many advantages of having such an organization. Mr. A. G. Schanche, the new president of the club presided. The principal speaker, Mr. F. H. Anson, president of the company, told of some of his experiences with the successful development of technical control in the flour and sugar as well as in the pulp and paper industries. Mr. R. A. Melnis, manager of the mill, was the other speaker and from the sample extract in the *Broke Hustler* we can imagine the hilarity with which his stories were greeted.

No doubt the success of this club and the interest taken in it has considerable to do with the successful introduction of scientific management and technical control for the whole mill which has been so thoroughly approved by workmen and management alike.

## PULP MILL STOCKS INCREASED IN OCTOBER.

Comparing the stocks on hand at the U. S. pulp mills at the end of the month with their average daily production based on the reports covering the years 1917, 1918, and 1919, the figures of the Federal Trade Commission show that:

Ground wood pulp mill stocks equal slightly less than 21 days average output.

News grade sulphite mill stocks equal slightly more than 7 days' average output.

Bleached sulphite mill stocks equal slightly less than 3 days' average output.

Easy bleaching sulphite mill stocks equal slightly more than 3 days' average output.

Mitscherlich sulphite mill stocks equal slightly less than 5 days' average output.

Sulphate mill stocks equal slightly more than 10 days' average output.

Soda pulp mill stocks equal slightly less than 5 days' average output.

Mill stocks of "other than wood pulp" equal about 6 days' average output.

Total mill stocks of all grades equal slightly less than 12 days' average output.

Total stocks of all grades of pulp in the mills on October 31, amounted to 128,462 tons. Mill stocks of bleached sulphite and easy bleaching sulphite decreased during the month. All other grades increased.

Canadian Kron Scale Company have opened offices and factory at 23 St. Alexander Street, Montreal, where they are making "Kron" Scales and "Stue-Bing" lift truck both of which are well known in the Paper and Pulp Industry. Mr. G. H. Smith remains as General Manager.

### THE ART OF BOX-MAKING

**A Practical Training Course in Boxing and Crating is being given at Forest Products Laboratory, Madison, Wisconsin.**

There is a daily loss to shippers and manufacturers conservatively estimated at \$500,000 due to poor packing and expensive and improperly designed containers for all classes of domestic and foreign shipments. Class 1 railroads alone expended for lost and damaged freight during the year 1919, \$103,078,862, and the western inspection bureau in 12 cities during July 1919 refused or repaired 43,738 packages. These are but two isolated examples.

An efficient container must deliver its contents in a satisfactory condition at a minimum cost.

#### **How the demand for accurate information is being met**

Commercial research and mechanical tests at the Forest Products Laboratory on better containers began in 1915 in cooperation with the National Association of Box Manufacturers, and the National Canners and National Wholesale Grocers Associations. In this work methods and testing equipment which have become standard for the box industry were developed.

The demand upon the laboratory for information suggested a series of cooperative training classes for men from various industries. These classes began during the war and have been attended by representatives of such concerns as: Western Electric Company, Montgomery Ward & Company, Armour, Swift, Morris and Sprague-Warner packing companies, Quaker Oats, General Motors, forwarding companies, and furniture and box manufacturers.

The course lasts 5½ working days. Reference material and condensed notes are given out and it is necessary for those attending to devote a portion of each evening to study.

Only a limited number are accepted in a class. This makes possible the exchange of ideas and experiences with men from different organizations and the research men of the laboratory. A series of lectures on kiln drying, glues, fibre board, and box woods is given. One subject is studied each day.

### **BORDEN GOES FROM U. T. A. TO A. W. P.**

Joseph A. Borden, formerly General Secretary of the United Typothetae of America, has recently been appointed director of Service of the American Writing Paper Company of Holyoke, Massachusetts, manufacturers of Eagle-A papers.

Mr. Borden's work is, as his title indicates, to be that of a service director. He will personify the cooperative spirit that the American Writing Paper Company is showing in its advertising program and in its relation with the printing industry. He will be at the service of printers throughout the country who have been invited by the Paper Company to turn to him for help, advice or suggestions, with the realization that they are consulting an expert who has an intimate knowledge of their problems and the problems of the industry as a whole. All of the service work of the Company will be done under Mr. Borden's direction and plans for the development of new service projects will be announced in due course.

The Japanese Tissue Mills, Holyoke, Mass., announce a change in the firm's corporate name to the American Tissue Mills.

### LAURENTIDE TO HAUL WOOD ON ICE.

Due to the freezing of the river north of Grand Piles, the 1,000 cords of hardwood that were cut near the Manigance Rapids during the late summer are still in the woods. An experiment is to be made shortly with a few loads of the wood which will be brought to the mill by the tractors which are at the Proulx nursery of the Forestry Department. If the cost of bringing in the hardwood over the ice by means of the tractors is not too expensive, it is likely that much of the wood will be brought in during the winter. The hardwood, it will be recalled, is to be used for the manufacture of groundwood pulp, experiments having shown that certain varieties of hardwood may be used advantageously.

### CAUGHT IN SHAFT, HAS NARROW ESCAPE.

Caught in a revolving shaft in the beater room while locating positions for wiring motors, William Redman, assistant electrical foreman at Laurentide, narrowly escaped death last week. His clothes were torn from his body by the shaft before he fell about twelve feet to the floor of the beater room. His injuries while serious are not believed to be fatal.

### WILL MAKE THEM IN CANADA.

The Garden City Paper Mills Co. Limited, of St. Catharines and Merriton, Ontario, will commence about the middle of December to manufacture Northern folded paper towels. The Northern Paper Mills Co. of Green Bay, Wis., have completed arrangements with Garden City Paper Mills Co. to manufacture this line in Canada, which will shortly be followed up with additional lines.

The quality of Northern towels and their cabinet distribution system is well known to the Canadian trade, and it will be a source of pleasure to the Canadian wholesale paper merchant to know that he will now be able to buy this line made in Canada, from a mill whose products are now well known to the Trade.

### SEAWEED PULP SUCCESSFUL.

That the manufacture of paper pulp from seaweed is proving a profitable undertaking seems evidenced by the fact, reported by Consul General George H. Seidmore, that the only company manufacturing this pulp is building another factory. This concern was organized in December, 1919, and is producing by a secret process, about 50 tons of pulp daily, which is largely used in the composition of cigarette paper. The new plant when completed will have a daily capacity of 150 tons of pulp. The present price is about five cents a pound.—Scientific American.

At Espanola, the Spanish River Pulp and Paper Mills has erected 51 new houses since spring. At Sturgeon Falls, 10 houses of the Aladdin type went up in 8 weeks.

The Invincible Paper and Pulp Corporation, 135 Broadway, New York, have been appointed exclusive selling agents for the Maine Pulp and Paper Corporation, Skowhegan, Me.

The Coty Bag Machine Company, of Watertown, N.Y., is transferring its factory to Toledo, Ohio, where a plant more adapted for the production of bag machines has been acquired. The offices of the company in Watertown will be retained.



# PULP AND PAPER NEWS

Canadian Engravers, Limited, has been organized and has been granted an Ontario charter to carry on business as lithographers, printers, designers, etc., with head office at Toronto. The company has an authorized capital of \$40,000 and the provisional directors are E. G. Joy, I. Rouse and L. Norris.

Last week completed the forty-sixth year of publication for the Amherstburg Echo. Mr. John Auld has been editor from the start and five other employes have an aggregate of 149 years' service to their credit.

The Beaver Board factory, at Thorold, closed down last week on orders from Buffalo. No explanation was given but as the plant has been running almost up to capacity right up to the time of hanging out the bulletin informing the employees of the cessation of operations, it is believed to be a move towards the lowering of wages. The shut-down is likely to be of a temporary character. The organization is known as the Beaver Wood Fibre Co., Limited, and the main office is in Buffalo. About 800 men are employed and the company manufactures wood pulp and fibre for wall board.

Mr. A. L. Dawe, secretary of the Canadian Pulp and Paper Association, has sent a message to the Dominion Tariff Commission in session in Toronto, branding as false the statements made by Mr. W. F. Maclean, M.P., before the Commission. The whole story is told elsewhere in this issue.

A spokesman of the commercial printers of Toronto filed a brief with the Tariff Commission in Toronto last week, setting forth the views of the industry. It gave general approval to the principle of protection but thought an increase in certain directions would be an admirable step. Mayors and industrial commissioners are willing to confer all possible privileges upon American branch factories in order to lure them into Canada but the printers think that steps should be taken to prevent them getting their catalogues and price-lists printed so freely and so cheaply by the parent establishments across the border. It was suggested by the chairman of the Commission that the printers should revise their memorial, adding further data, and present it at the final meeting in Ottawa.

The sympathy of the pulp and paper trade will be extended to Lieut.-Col. Thomas Gibson and J. G. Gibson, vice-president and secretary respectively of the Spanish River and Paper Mills Limited, Toronto, in the double bereavement involving the loss of their mother and father within the past month. Mrs. Gibson passed away just about a month ago and the father, Joseph Gibson died this week in his 79th year. The late Joseph Gibson was known throughout Canada as a temperance advocate and orator, and in 1878 he contested South Oxford in the Conservative interests against the late Col. Skinner. He was a Fenian Raid veteran and was prominent in the public affairs of Oxford County and his home town of Ingersoll where he died. He was a prominent Mason and a leading official of the Methodist Church in Ontario. The late Mr. Gibson came to

Canada from England when a boy and had lived in Ingersoll almost continuously since.

The Toronto Metal and Waste Company, Limited, 213 King Street, Toronto, metal and waste rag dealers, are in liquidation with assets of \$20,000 and liabilities of from \$20,000 to \$25,000. It is expected that a compromise will be effected of fifty cents on the dollar. Twenty per cent of the compromise settlement will be paid in cash and the balance of thirty per cent will be paid by six, twelve and eighteen months notes. The principals of the firm are Jacob Moldover, Oscar Moldover and Isaac Olanov. The disposition of the business has not been decided on as yet.

Mr. T. L. Crossley, Consulting Chemical Engineer, and Editor of the Canadian Chemical Journal, was the speaker at the regular luncheon of the Electric Club of Toronto at the Mossop Hotel, Toronto, on Friday of last week. Mr. Crossley gave an exceedingly interesting and illuminating talk describing the process of paper making and a series of lime light views added materially to the value and impressiveness of his remarks.

Among the callers at the Toronto office of the George H. Mead Company during the past few days were Mr. A. J. Gaudette, of the order department of the Spanish River mills; Mr. F. Moynes, of the Dayton office of the company, and Dr. E. O. Merchant, the company's economist and statistician.

Mr. J. O. Herity, of the firm of Morton & Herity, proprietors of the Daily Ontario, Belleville, and for the past ten years editor of that paper, is leaving journalism, having been appointed manager and secretary of the Belleville Chamber of Commerce.

Mr. M. J. Hutchison, late of Edmonton, has arrived in Toronto and has entered upon his new duties as manager of the Canadian National Newspaper Association.

The newsprint situation took the lead among questions discussed at a convention of publishers of smaller dailies of Western Ontario in St. Catharines, on Nov. 30. The gathering was addressed by Mr. Will V. Tufford, of Clinton, Iowa, secretary of the Inland Daily Press Association of the western states.

Mr. R. C. Sage, manager of the Woodstock, Ont., Gas Company, has resigned his position to become connected with a publishing house in Toronto.

## BRITISH COLUMBIA MILLS WELL ENGAGED.

With the exception of the Beaver Cove Lumber & Pulp Co. plant, all the mills in British Columbia are operating to capacity and the Rainy River plant is coming right along.

There are one or two new plants being planned but nothing definite can be said at present regarding those new propositions. It is rumored that a Japanese firm is planning to build a plant on Queen Charlotte Islands, but there is no certainty in this connection as the nearest information is that a certain Japanese owns some timber limits in that locality and has been talking a pulp plant.—E.P.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**B-3. Practical utility of planes in forestry.** J. B. Harkin, Commissioner of Dominion Parks. *Can. For. J.* Dec. 1919, p. 511. Would an equal investment in forest wardens achieve better results in fire prevention.—C. L.

**B-4. Logging engineering course has helped industry.** *Western Lumberman*, January, 1920, p. 37. Discussion of the results accomplished through the establishment of a course in logging engineering at the University of Washington. Need for the establishment of such a course in connection with the proposed forestry department in the University of British Columbia.—C. L.

**B-4. Sugar from Douglas fir.** Francis Dicke. *Pacific Coast Lbrman*, Feb'y, 1920, p. 27. A Sweet substance gathers on the needles.—C. L.

**B-5. Wood preservation means much to industry.** W. Kynoch, Acting Supt. Forest Products Laboratories of Canada. *Wes. Lbrman*, March, 1920, p. 31. Reduces cost of upkeep where timber is used in exposed service. Combating the principal agencies which bring about deterioration; prevention of fungous growth; research work; creosote treatment of railway ties.—C. L.

**B-9. Australian state forests.** *Pacific Coast Lbrman* April, 1920, p. 51.—C. L.

**B-9. The state as boss of its forest properties.** Robson Black. *Can. For. J.* Nov. 1919, p. 453. A permanent forest asset easily within the power of the Canadian people—the lumberman's view.—C. L.

**B-0. The forester—A Sketch.** W. F. V. Atkinson. *Can. For. J.* October, 1919, p. 405. Discusses forestry and the work of a forester.—C. L.

**B-6. Controlling torrents in France.** H. R. MacMillan. *Can. For. J.* March, 1920, p. 121. When the French program is completed, total cost will not exceed one year's damage.—C. L.

**B-9. Great profits from forests in the French Jura.** Col. T. S. Woolsey, Jr. *Can. For. J.* March, 1920, p. 116. 70 M feet per acre produced under careful system of forest management.—C. L.

**B-9. Newfoundland needs a forestry policy.** *Can. For. J.* October, 1919, p. 112.—C. L.

**B-9. Ontario must face these facts now.** Robson Black. *Can. For. J.* Dec. 1919, p. 483. Discusses the forestry situation in Ontario and shows the need for a constructive policy.—C. L.

**B-9. Southern Foresters hold conference.** *American Lumberman*, Feb'y 7, 1920, p. 60. A report of the Southern Forestry Congress, held at New Orleans, Louisiana. Resolutions deploring the continuance of practices of forest demolition, and urging the enactment of legislation by the southern States that will require and make possible the adoption of measures by owners that will prevent such devastation and afford opportunity for a natural replacement of forest growth on land not suited for settlement.—C. L.

**B-9. Empire State Foresters confer.** *Amer. Lbrman*, Feb'y 7, 1920, p. 62. A review of the Proceedings of the New York State Forestry Assn, held at Buffalo, N. Y., January 28. Text of resolutions advocating an ad-

vanced policy of forestry; better forest protection; survey of forest resources; publicity work in forestry; forest research; improved forest taxation laws; reforestation of state land and of private land through state aid; adequate appropriations to make the foregoing effective.—C. L.

**B-9. The progress of forestry in Canada.** Clyde Leavitt. *Can. For. J.*, March, 1920, p. 130. Text of report of the Committee on Forests, Commission of Conservation, annual meeting, 1920. For continuation see succeeding numbers of *Canadian Forestry Journal*.—C. L.

**K-6. Straw; Utilisation of waste liquors obtained in the digestion of.**—S. Herzberg. G. P. 321,453, 28.3.19 Addn. to 319,068 (preceding). The liquor or at least the portion to be used as anodic bath, is treated in the cold with mineral acid or bisulphate and heated to 70 deg. C.; it is then filtered from precipitated organic substances and electrolysed. The precipitated lignic acid can be utilised, and if common salt solution is used as anodic electrolyte the chlorine produced may be employed in the dissolution of chopped straw previously treated with milk of lime.—J. S.

**K-10. Sizing, waterproofing, dressing, etc. of paper, fabrics and the like.** W. Schmidt and E. Heuser. German Patent 321,232. Mar. 15, 1918. Addition to 296,124. The paper pulp or fabric is treated with a solution of tar soap prepared by saponification of wood, lignite or coal-tar, previously extracted with water. Injurious acid substances may be removed from the tar by distillation, and a soap prepared by incomplete saponification of the tar may be used.—C. J. W.

**K-10. Paper, boards, and paper textiles; sizing and waterproofing.** P. E. Altman, Dresden-Tolkewitz. Ger. Pat. 304,305, 2, 8, 17. The material is impregnated with a mixture of saponified beeswax, water-soluble oils, and talc, and the sizing agent is fixed by means of alum solution.—J. S.

**K-10. Emulsions for sizing paper; Manufacture of.**—G. Muth, Muremberg, Ger. Pat. 316,345, 27.6.18. Coumarone resin, or a similar coal-tar resin, is emulsified with an aqueous solution of a vegetable or animal glue or a similar colloid, and a solution of an aluminum salt is added; casein may be employed as the colloid if it is first converted to the water-soluble form.—J. S.

**K-18. Cardboard, grease and waterproof.** L. Buchbinder. G. P. 316,527, 19.3.19. Addition to 306,028. Cardboard which has been coated with a glue precipitate containing a filling material, in accordance with the chief patent (J. L. 1918, 575A) and dried, is further coated with a mixture consisting of a saturated solution of tannin and resin in spirit and a varnish containing a drier, to which mixture zinc white and formaldehyde have been added.—J. S.

**L-5. Waste liquors.** F. Kuttner, E. Profeld and E. Suller. G. P. 322,461, 8.7.19. Waste liquors from the mercerisation process and viscose manufacture are concentrated and simultaneously oxidised in open vessels, whereby the hemicellulose is converted into insoluble oxycellulose. The oxidation may be carried out by injecting air into the liquors or by the addition of alkali nitrate.—J. S.

### RELATIVE IMPORTANCE OF SLIP AND FRICTION IN BELTS.

With the ever-increasing use of mechanical appliances of all kinds now playing a big part in practically all industrial plants, transmission of power by means of belting is one of the most important factors, one which cannot be overlooked.

Since the original installation of belts to transmit power the one conclusion that has been formed in the minds of every one concerned with machinery appliances is that belts have frequently been a source of production and power losses. Two of the principal factors which figure proportionately in such losses are slip, and friction due to tight belts.

It has been proved that although belt slippage may not waste much power, it does reduce the production; and each per cent of slip is equivalent to the loss of production for 3 days each 300-day year. Since the loss of power reduces the production for the power used, each per cent of slip means the loss of 1 per cent of power.

A belt will slip just as readily on a pulley 4 ft. in diameter as it will on a 2-ft. pulley, provided the conditions of the pulley faces, the arc of contact, the tension and the number of feet the belt travels per minute are the same in both cases.

Resistance to slippage depends upon the coefficient of friction, area of surface contact and the condition of the two surfaces. For leather belting running on ordinary iron or wood pulleys the coefficient is 0.3 to 0.4 average for dry surfaces and about 0.15 to 0.2 for wet surfaces. For efficient operation the coefficient must be as high as possible.

Frequently powerful screwed clamps are used to put on belts, but this practice makes the belt extremely tight, all of which is very injurious to the leather or whatever the texture the belt may be. In all cases where belts are run horizontally they should have no more strain imposed upon them than is necessary to transmit the power required.

Several mill engineers of large experience have stated that three-quarters of the trouble experienced with hot boxes, broken pulleys and other causes for shut-downs can be traced to tight belts. Unusual pressure put on pulleys and shafting in this manner in time will cause them to break, and in many cases the machinery will suffer as a result of the frequent heating of the bearings, which will inevitably make them useless for the time they are undergoing repairs.

Not infrequently when a belt begins to slip, the time honored remedy is to "tighten it." While this procedure will reduce the slip, it will not materially reduce the loss of power. The result is, the production loss is changed to a power loss from increased bearing friction. When belting (any) two or more pulleys it will be found that if a belt is not tight and does not slip there is scarcely a limit to the power it will transmit before it wears out.

One of the most important qualities in a belt is a high continuous co-efficient of friction. If such a thing were possible whereby the original co-efficient of friction and initial tension could be maintained, there would be very little trouble encountered in designing a belt for each drive that would be trouble-proof.

The somewhat natural tendency of friction, pressure and of belt creep affects the frictional co-efficient after which the tension is reduced due to the natural stress of the load, which stretches the belt. These

factors will vary in accordance with the composition of the belt.

There are several other causes for destruction of frictional co-efficient: moisture, grease, dust and dirt. To overcome these destructive elements, belt manufacturers have used various substances in the making of their belts. A few other troublesome factors in belt upkeep are: rosin, molasses, printers' ink and oils of all kinds.

Of course, all belt makers have seen the need for preserving their belts, and this usually carried out according to requirements, such as temperature and general working conditions to which the belt is to be subjected.

Cement mills and crushing plants are about the largest users of belt dressings, some of which are recommended by the belt manufacturers, while in most cases (from a mistaken idea of economy), a home-made compound is used. The general formula of the latter is rosin, tallow, neatfoot oil and heavy crusher oil. By noting several of the ingredients composing this compound, such as rosin and mineral oil, it stands to reason that by their use belts of most any texture will be short-lived, as the effect of both are destructive to leather belts.

By a careful, methodical study and test of transmission, slip and tension losses have been reduced to 75 per cent, while belt costs have been cut 60 per cent. The most useless thing to manufacturers and to all concerned is the power wasted in transmission. The efficiency of transmission depends largely upon the intelligence and thoroughness with which it is managed.—The Amphibian.

### MILLIDGE PROMOTED.

Mr. B. de B. Millidge, who is now Chief of the Technical Service Department of the Brompton Pulp and Paper Company at East Angus has been elected to Junior Membership in the Technical Section. Mr. Millidge, prior to this was a student member, and as such submitted a winning essay in the competition last year. He is a Canadian from St. John, N. B. whose advancement, like that of other student members is gratifying to those who are giving these young men the opportunity to become useful members of the industry.

Mr. C. M. Croft, who is now attending McGill University, has been elected a student member of the Technical Section.

### A SURE THING, IF YOU KEEP ON DIGGING.

The workman was digging. The wayfarer of the inquisitive turn of mind stopped for a moment to look on.

"My man," said the wayfarer at length, "what are you digging for?"

The workman looked up. "Money," he replied. "Money!" ejaculated the amazed wayfarer. "And when do you expect to strike it?"

"On Saturday," replied the workman, as he resumed operations.

—Tit-Bits.

"Just bear in mind, my boy."

"What, dad?"

"You don't find any epitaph in any cemetery reading 'Here lies a cracker-jack pool player'."



# UNITED STATES NOTES

A cable dispatch received at Washington last week from American trade representative Draesel, at Berlin, states that permission has been granted by the Economic Minister to the Verband Deutsche Drukmonder Fabriken, to export paper without license until March 31, 1921, provided Germany's internal needs are covered. The Verband announce that they are in a position to sell 1,000 tons monthly during January, February and March, and possibly 500 tons in December.

E. R. Laey, vice-president and general manager of product to paper mills, the Grass Fiber and Paper announces that work on the concern's pulp mill at Leesburg, Florida, is nearing completion. This company will utilize saw grass for the manufacture of paper pulp. Much of this material is available in Florida and, according to the men interested in the Leesburg project, it has been found suitable for pulp making. While engaging at the outset only in the manufacture of pulp, shipping this for conversion into the finished product to paper mills, the Grass River Fiber and Paper Company intends ultimately to operate paper mills of its own for the utilization of the native grass. The plant now being built will have a daily capacity of twenty-five tons of paper pulp. According to Mr. Laey, the supply of pulp material in Florida is sufficient for the entire country.

University and forestry school representatives from all over the United States will meet at Yale University, New Haven, Conn., December 17 and 18, to discuss education in forestry. Special committees will report on undergraduate courses in forestry, specialization by forestry students, extension courses, and forestry subjects as cultural studies in public and private schools and in colleges.

Of seventeen trades listed in the report on industrial disputes submitted by Edward D. Jackson, Chief Mediator of the New York State Industrial Commission, only the paper and pulp and two allied industries are reported as having had no strikes or disputes whatever in the Empire State during the three months ended September 30, 1920. Several of the trades that were affected during this period showed anywhere from nine to sixteen separate disputes with the loss in some cases of as many as 150,000 to 200,000 working days. The paper and pulp industry, however, was singularly free of disputes. This was the case also in the water, light and power industry, and in the chemical oil and paint trades.

The Great Northern Paper Company's price for news print in rolls, carload lots, on contract during 1921 will be 5 cents a pound. The Great Northern Company does not follow the practice of other concerns in the paper business in revising prices quarterly, but makes a flat price subject to adjustment according to increase in manufacturing costs, for the year in advance. This company is the second largest producer in the country with an output of approximately 250,000 tons of news-print annually.

A new company is being organized in Michigan to take over a special paper line now being manufactured by a Wisconsin concern. This new venture is to be headed by Carral A. Hubbard, for several years sales

manager of the Bryant Paper Company, who has announced his intention to resign from the latter concern about January 1. The mill to be taken over runs one machine exclusively on onion skin paper, and it is the plan of Mr. Hubbard and his associates to promote the sale of this commodity.

Recent reports from Maine indicate that decline has begun in pulp wood prices and cheaper print paper may be looked for as the result. Rough wood in Maine has dropped from \$18.50 and \$21, at which contracts were closed last October, to \$12 and \$13 to-day, and peeled wood has dropped from \$28.50 and \$30 to \$20 and \$21 a cord. It is predicted that these quotations will go still lower. The decline in wood values has been followed by reductions in wages.

The Seaman Paper Company, 200 Fifth Avenue, New York, has added to its executive force Judge Charles F. Moore, who was associated until recently with the Parsons Trading Company. Judge Moore will act as special representative to aid in promotion work. The Seaman Company has had need of just such a man as Judge Moore who is thoroughly up on the industry in all its branches.

W. A. Kelly, who has long been prominently identified with the paper making industry in the Great Lakes region, has left the administrative forces of the Marathon Paper Mills Company, at Rothschild, Wis., to become general superintendent of the Northern Paper mills at Green Bay, Wis. Mr. Kelly started his paper making career when 11 years old and he has been associated with mills in various parts of the country since he began, years ago, with the Falls Manufacturing Company, at Oconto Falls, Wis.

Reports on factory workers' wages in New York State in October put the paper, paper goods and printing trades in the groups showing lessened earnings. The paper trade is placed in the tabulation among those industries in which there was a conspicuous reduction during the month in the average weekly wage of its workers. This loss in earnings is ascribed in the report to the fact that some plants showed the end of the high level of production which prevailed in the industries during recent months but which has now been followed by lessened activity on account of dull business.

Following a recent conference and inspection tour of cutover pine lands in La Salle Parish, Louisiana, William H. Sullivan, general manager of the Great Southern Lumber Company, speaking for the heads of this concern, expressed the confident belief that Bogalusa, headquarters of the big lumber plant, can be made into the biggest paper manufacturing city in the world. Mr. Sullivan announced that the Great Southern plans to spend \$8,000,000 within the next five years in adding four units to its paper mills, consuming pulp manufactured from the tops of pine trees.

Whitney & Company, paper box manufacturers at Leominster, Mass., have put into effect a wage reduction of from 10 to 15 per cent. Fred Whitney, president of the company, says that the decrease was made necessary by a falling off in business.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Dec. 4.—Canadian paper trade and pulp circles view the fixing of newsprint prices with satisfaction, although as far as the jobbers are concerned they will still have to pay from 10c to 13c for their news supplies. The six and a half cent rate and, in some cases the seven cent rates to publishers means a good deal to pulpwood producers who declare that with newsprint prices well sustained the mills can afford to pay a fair rate for the raw material and as a result prices for pulpwood can be maintained. It is pointed out that while the Canadian Export Company, which markets the production of several of the Quebec pulp and paper companies, have announced a six and a half cent rate for newsprint for the first quarter of the new year, a number of the companies in Quebec have been selling at six cents a pound and some of the Ontario mills have been disposing of their product at five cents. Following upon the announcement of the Canadian Export Company's prices came word that the George H. Meade Company, of Dayton, Ohio, which handles the export business of the Spanish River and Abitibi companies had arranged a rate of 7c per pound or \$140 a ton for the first six months of 1921, but this has not been officially announced. It had been thought in the trade that 6 $\frac{3}{4}$ c was about the highest price likely and when the International Paper Company, a few days ago, announced the continuation of the six and a half cent rate for the first quarter of the new year, this was generally accepted as establishing a precedent which would be followed by most of the Canadian export interests. The Canadian Export Paper Company, Limited, buys the exportable surplus of most of the big eastern producers such as Laurentide, Price Bros. Belgo-Canadian and Brompton and their price has followed the American precedent. This is a slight increase for the eastern mills as it is understood that the highest they have been getting this year is six cents on contract paper. On the other hand the big producers of newsprint in the north-western territory Spanish River and Abitibi, made contracts in 1919 which restrained them from exceeding a price of five cents per pound. The new rate for the first half of 1921 is therefore a jump of two cents, or \$40 a ton. With the prices fixed for the early part of the new year the general opinion is that the newsprint producers face conditions that may prove equally prosperous with those of the past year.

**PULPWOOD.**—A Toronto representative of a lumber and pulpwood concern who visited a number of the paper mills during the past week found that while none of them were short, shipments of incoming pulpwood were very light. Prices remain unchanged and no change is looked for in peeled wood, although it is anticipated that rough wood will exhibit an upward tendency in the next few months when the new season for wood opens. At the present time there is no surplus of peeled wood in the country.

**TISSUES AND TOILETS.**—With buying practically suspended in toilets, tissues and light weight papers,

prices remain firm in sympathy with pulp prices. Manufacturers complain of the high prices for their raw stock and declare that foreign paper manufacturers are taking advantage of the high prices for pulp and are sending paper into this country. One tissue and toilet paper manufacturer declared that talk of these foreign importations was no hogey and that paper from Germany, Japan, the United States and the Scandinavian countries were actually being landed in this country to compete against the output of the Canadian mills which have to pay altogether too high prices for their raw stock. He contended that by keeping the price of bleached pulp up to around \$190 a ton the pulp men were playing into the hands of foreign competition which was proving more serious than a good many people had any idea of.

**BOOK PAPERS.**—General conditions are unchanged. The demand continues to fall off and the mills are pretty well caught up. Stocks, in the meantime, are accumulating in the jobbers' warehouses, although there has been very little price-cutting to the consumer and printer. Jobber have asked the mills for cancellations, but in very rare occasions only, and although most warehouses contain pretty fair stocks of book papers now, jobbers are not worrying, being confident that buying will set in again about the first of the year and that prices will not seriously recede before then.

**BONDS AND WRITINGS.**—The mills are making much freer deliveries now and fairly well assorted stocks are seen in the warehouse in contrast to empty shelves a few weeks ago. There is a fair demand for bonds, writings and ledgers which the jobber is in a better position now to supply than he has been for months, most of the back orders having been filled by the mills. Prices remain firm.

**KRAFT.**—The general trade depression is reflected in lessened demand and sales of kraft paper, most of the dealers marking time to see what is going to happen to the market. Stocks are low, however, and the general opinion seems to be that following the present stock-taking period buying will commence again pretty much on the old basis. This, however, is not looked for until the beginning of the new year and in the meantime there is a general disposition to hold off buying in anticipation of lower prices.

**POSTER PAPER.**—Colored poster paper has hitherto been rather hard to get from the mills and the monthly stock sheets issued by the mills, showing stock on hand have been bare of colored poster for some months. A stock sheet just to hand for one of the mills shows that this line can now be obtained in reasonable quantities and indicates that the mills are reaching a position where they can now stock up on such lines as mentioned.

**WRAPPING PAPERS.**—Jobbing houses report that shipments of wrapping papers are coming through in adequate quantities and that there is no difficulty now in getting supplies. In sympathy with other lines of paper the demand has fallen off somewhat but a fairly good volume of business is still being done.

**TWINE.**—A reduction in the price of cotton twine was announced at the end of the week, marking the third drop since last September. The latest is a drop of five cents, the present quotation being about 46c a pound.

### NEW YORK MARKETS.

New York, December 4.—(Special Correspondence).—Quietness still obtains in the paper trade in New York, and, judging from all reports, in other consuming and distributing centres of the country. Buyers are operating strictly on a hand-to-mouth basis, coming into the market only when pressed by necessity for supplies and even then confining orders to paper immediately required. Mills in various parts of the States are curtailing production. Some mills have closed down entirely for a time, and a majority of plants have reduced their operating schedule to from two to five days per week, depending on the position they are in as regards orders booked. Manufacturers are taking the view that it is better to decrease production than to lower prices to non-profitable levels in the hope of securing sufficient business to keep running full. As present conditions size up, the probabilities are that further sharp cuts in prices would hardly induce consumers to enlarge their buying. The tendency today is to refrain from purchasing any and every commodity unless immediate need for the article is felt, and lower prices are not creative of broader demand. The trouble with the buying public at present is that they have temporarily lost faith in the stability of prices, and until this faith is regained the average consumer is not going to be led to buy articles not instantly and urgently needed. Paper manufacturers realize this, having situations in many other commodities to guide them, and there is little doubt that they are combating existing conditions in the proper way by curtailing output for a time.

There is no pronounced pressure to sell paper of most kinds on the part of mills. There are exceptions to this, of course, and some lots of paper are being marketed at appreciable recessions in price, but on the whole manufacturers are waiting for customers to come to them to get supplies, and are generally pursuing waiting tactics in the firm belief that business will improve soon after the turn of the year and that demand for paper of all varieties will revive to something like normal volume.

From all indications, the consumption of newsprint continues of heavy tonnage. With newspapers carrying page upon page of pre-holiday advertising, their size seems to be increasing every day. A local afternoon newspaper yesterday broke all advertising records for New York dailies when it carried 324 columns of display advertising in a 50-page issue. This paper boasts a circulation of about 750,000 copies per day. The market for newsprint has steadied perceptibly. Publishers are commencing to look after their next year's supplies and are dickering with manufacturers over contracts. This has a strengthening influence on spot prices, which rule firmer than for some time at a basis of 7 to 7.50 cents per pound, with most producers inclined to demand the latter figure.

So far as concerns spot prices, quotations on book papers are in a rather easy position. Most book mills have sufficient orders on file to keep them run-

ning very nearly full, this class of paper plants being probably in a more favorable situation than all others, but spot shipments of book papers are being offered at a considerable reduction from the prices prevailing not long ago. Machine finished book paper is available from mills at 13 cents per pound and it is said that purchases could be made in some quarters down to 12 cents. Contract prices are marked by a steady tone at around 9.50 to 10.50 cents a pound for machine finished book.

Kraft wrappings are in moderate demand and quotations are generally unaltered at levels representing a slight decline from the top points reached several months ago. No. 1 domestic kraft is quoted in the open market at about 12 cents a pound at mills, while No. 1 jute is priced at 14 to 15 cents a pound. Tissues are holding their own in price and are moving in fair quantity. No. 1 white tissue is quoted at \$1.75 to \$2, No. 2 white at \$1.60 to \$1.75 and No. 1 manila tissue at around \$1.65.

Fine papers are in quiet demand and it is mills producing this class of paper that have curtailed operations to such extremes as to reduce their running time to two and three days a week. Consumers of bond and ledger papers are holding aloof as buyers to a greater degree than all others, and yet manufacturers of fine papers can least afford to lower prices because their production costs have possibly decreased the least. Mills as a rule are manufacturing only enough paper to fill contract commitments and to keep stocks intact to enable them to complete other such orders as are received.

Boards are moving slowly and are decidedly weak in price. Manufacturers are accepting orders at almost any old price so long as there is a small profit for them in operating, and there have been rumors of sales of plain chip board at \$45 per ton at mills and even lower. Quotations on chip range from \$55 to \$60 and on filled news board at from \$65 to \$70, but supplies can be obtained for a good deal less.

**GROUNDED WOOD.**—There is scarcely any demand whatever for mechanical wood pulp. Consumers for the most part are finding contract supplies ample to cover present requirements and are keeping out of the market as buyers excepting for occasional purchases of small tonnages. In the absence of transactions it is difficult to ascertain what prices really are. Quotations of sellers range around \$100 per ton on domestic spruce ground wood for prompt shipment and around \$85 for imported pulp on the dock, but judging from all the stories heard in the trade, ground wood can be obtained for substantially less than these figures. There is no pronounced selling pressure in vogue, but at the same time there are producers and dealers who have pulp they are anxious to move and who are evidently accepting low prices in order to convert their stocks into cash.

**CHEMICAL PULP.**—Chemical wood pulps are in slow demand. In fact, most dealers and importers claim to be unable to find buyers, so indisposed are papermakers to absorb supplies while finding that contract shipments are sufficient to cover present needs. Prices are easy in tone and it is problematical at just how low pulp can be bought. Manufacturers are generally refusing to enter into forward commitments at any reduction in price but surplus lots are being disposed of for prompt delivery at sharp cuts in price whenever buyers can be located. It is



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stated that domestic bleached sulphite can be purchased down to 9.50 cents a pound at mills, domestic easy bleaching sulphite at 7.50 cents, news grade sulphite at 6.50 cents and domestic kraft at 5.50 cents, which figures represent quite a reduction from the quotations prevailing a short while back. Foreign pulps are coming in rather freely and in comparatively large amounts. Quotations on imported bleached sulphite range from 11 to 12 cents per pound, on easy bleaching at 8.50 to 9 cents, on unbleached sulphite at 8 to 8.50 cents and on Scandinavian kraft at 5.75 to 6 cents.

Receipts of foreign pulp at the port of New York during the current week included 4,966 bales from Christiania, 1,437 bales from Hamburg, 1,800 bales from Copenhagen, 2,610 bales from Trondhjem, and 1,460 bales from Kobe.

RAGS.—Papermaking rags are little wanted by mills and the downward trend in prices is still unchecked. Those few buyers operating are in a happy position of being enabled to secure supplies at very nearly any price they offer, the present market being strictly a buyers' market. As a matter of fact, so little actual business is transpiring that there is no established price basis, and about the only quotations available are those named by dealers at asking figures. No. 1 repacked old whites are obtainable by mills at 10 cents, and probably for less, while repacked old thirds and blues are offered at 3.50 cents per pound at shipping points, street soiled whites, at 2.75 cents, No. 2 repacked whites at 4.50 cents and roofing rags at 1.10 cents for No. 1 packing. New cuttings are also down further in value, reports coming to hand of offers by dealers of No. 1 white shirt cuttings at 20 cents a pound at shipping points, washables at 10 cents, unbleached muslin clips at 17 cents, white lawns at 19 cents and new blue overall cuttings at 10.50 cents.

PAPER STOCK.—The paper stock market is in a dull condition, there being a very slight demand from any consuming source, and prices continue to move downward. Values of low grades have sunk to levels where there is little room for additional decline but better quality papers are being bought by mills for less money. Shavings are quotably lower at 7.50 to 8 cents for No. 1 hard white and 6.75 to 7 cents for No. 1 soft white shavings at points of shipment. Folded newspapers are available to mills at 80 cents per hundred pounds f.o.b. New York and No. 1 mixed papers at 45 to 50 cents a hundred. Kraft paper

is down to 3.50 cents, white news cuttings to 3.75 cents and heavy book stock to 1.75 cents.

OLD ROPE AND BAGS.—There is little activity in old rope or bagging and quotations remain at about former levels, old manila rope of No. 1 grade being held at 5 cents a pound at shipping points and No. 1 serap bagging at 1.75 cents.

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If you are his friend; if you are on the square; if you are working your best whether he is around or not—don't worry or be timid, just go up to your foreman, your superintendent, or your manager, and talk with him like you would any other friend. He will think more of you—he will learn to know you better—you will get ahead faster and all will be better between employer and employee. Remember, men are men, whether born rich or poor, whether by circumstances he is foreman, superintendent or workman in the ranks, closer co-operation comes from closer friendship. Know your Foreman — and, Foremen, know your men. — Making Paper.

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# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

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## TABLE OF CONTENTS

### Editorial:

Canada interprets a continent . . . . .	1269
What about wages? . . . . .	1269
A good lesson . . . . .	1270

### Special Articles:

The measurement of pulp wood and the determination of the yields therefrom . . . . .	1271
How a paper mill uses periodicals . . . . .	1273
The business of forestry in Sweden . . . . .	1277

### News of the Industry:

University of B. C. inaugurates a Department of Forestry . . . . .	1276
Life Insurance for Belgo employees . . . . .	1280
Brompton buys more woodlands . . . . .	1281
Englishman's view of newsprint market . . . . .	1281
Committees of T. A. P. P. I. at work . . . . .	1282
Head of Lincoln Paper Mills dead . . . . .	1282
Harrison returns to B. C. . . . .	1282
Activity in New York and Texas . . . . .	1283
Important change in Whalen policy . . . . .	1283
Paper mill at Prince George, B. C. . . . .	1283
Western Canada Pulp and Paper Council . . . . .	1283

Printing costs higher in England . . . . .	1283
Reduce price of newsprint . . . . .	1284
Pulp mill for Arnprior, Ont. . . . .	1284
International improves Niagara Mill . . . . .	1284
New plant for Niagara Falls, N. Y. . . . .	1284
Beaver Cove plant closes till Spring . . . . .	1284
Henning Helin, consulting pulp expert . . . . .	1284
William Power dead . . . . .	1284
New paper plant at Ogdensburg . . . . .	1284
Pulp and paper news . . . . .	1285
St. Regis incorporates in Canada . . . . .	1285
Annual meeting of Technical Section . . . . .	1286
United States notes . . . . .	1288
Paper stocks increase in U. S. . . . .	1294

### Miscellaneous Information:

About our advertisers . . . . .	1279
The wonder town of the Northland . . . . .	1280
Review of recent literature . . . . .	1286
A fool's safety rules . . . . .	1291

### The Markets:

Canadian trade conditions . . . . .	1289
New York markets . . . . .	1290

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# EDITORIAL

## CANADA INTERPRETS A CONTINENT.

It is curious to note that the country which objected to the direct representation on the League of Nations Council of the various countries making up the British Empire, stands to benefit most by their presence. Had it not been for the provision in the organization of the League of Nations for representatives from Canada, the whole continent of North America would have been without a spokesman. The importance of the presence at Geneva of two Canadians of ability in statesmanship and argumentation and with vision, has been evident on several occasions where it was obvious that the delegates of European countries failed almost absolutely to appreciate the conditions and characteristics of this continent and its two principal nations. It is unfortunate indeed that the great republic should not be permitted to participate in the sessions of the first meeting of the council. The presence of the Canadian delegates, however, seems to hold promise that their interpretation of the attitude of the people on this continent—there is little difference between Canadians and Americans,—will result in the elimination from the covenant of the stumbling block which forms the principal source of dissension and keeps the United States out of the League. If the early and enthusiastic entrance of the United States to the League were the only result of the efforts of the Canadians at Geneva, their mission could be called exceedingly successful. Their service, however, goes farther than that. They are sufficiently acquainted with the economic, political, social and industrial conditions on this side to straighten out some obvious misconceptions on the part of European diplomats and they further have a vision, probably not entirely independent of the tradition of permanent peace between us and our neighbors, which not only enables but inspires them to discount and discourage openly and forcefully, any action of the council which would tend to revive or nourish those jealousies which have been such prolific sources of strife elsewhere and so conspicuously absent north of the Rio Grande. Let us hope then, that the Canadian delegates will continue in their great efforts courageously and wisely to bring the vision of our great peaceful continent to the jealous and war fearing countries across the sea.

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It is just as necessary to be honest, to be decent, to abstain from covetousness and from violence as it was in the days of Moses.

## WHAT ABOUT WAGES?

Wages are being reduced in some lines and are well maintained in others. In some industries, plants are working full time, in others part time, and occasionally mills are shut down altogether, also where unskilled labor is employed there are some propositions where help is needed but many more where work has been suspended and workmen are idle. It has been intimated in certain quarters that the shutting down of plants and suspension of work in other lines is a deliberate move on the part of employers to bring about a situation where wages could be reduced. The truth or falsity of such an opinion would be difficult to prove. It is difficult for us to see how the employer can keep his force at work and pay them wages if he is unable to sell his goods. On the other hand his employees could not purchase if they are not employed and paid.

The aggregate purchases for a period of time can be averaged to a normal rate of commercial business on the basis of a month or a week. If the consumers would buy at the normal rate then industries would operate at uniform production, employment would be steady and wages would be constantly available. If, however, the consumer, and the great majority of consumers are wage earners, refuse to make purchases, the retailer, the wholesaler and the manufacturer are unable to dispose of their goods and replenish their stock; in other words the industries which make the commodities of commerce would have nothing to do, or so little to do that they would be unable to keep their operating force normally employed. We have struck a period where the consumer has refused to buy. The retailer in his endeavor to clear his shelves has cut prices. He can afford to do this only to a limited extent else he will be unable to buy more goods. The cost of his stock has been high, partly because of the initial high cost of raw materials, the high wages, paid to the labor employed in their manufacture, and partly to the large profits accruing to the manufacturer and intermediate dealer because for the past few years the demand for most commodities has been in excess of the supply. Having witnessed reduction in some prices, the consumer comes to the conclusion that all prices will drop and that those which have fallen will go further. Some of them are already below what good business practice would dictate and can be afforded only because unusually high wages in the past few years have enabled dealers to dispose of stocks at unusual profits. On the other hand there are commodities which have

been bought at high price and which were originally high in cost of production. In some lines the cost of manufacturing has by no means been reduced in proportion to the prices at which retailers are selling the goods. Some basic commodities are now sufficiently low in price to have a material effect on the cost of living. The cost of manufacturing can only be reduced by lowering the percentage of profit, the expenses for labor, or the cost of raw material, all or in part. The first item is governed partly by the law of supply and demand and partly by the greed or generosity of the manufacturer or dealer. Both of the other items are essentially matters of labor. The more each worker produces, the cheaper it can be sold, thus he benefits.

If the manufacturer cannot reduce his cost of production, the wholesaler and retailer cannot afford to buy his goods and sell them to a public which refuses to buy at a price which would otherwise have to be charged to give him any profit at all. If a man cannot sell his goods he cannot employ labor. The situation then hangs on three points, the willingness of employers to sacrifice some profit, willingness of labor to accept reduction in wages commensurate with reduction in living costs in order that manufactured products may be sold at correspondingly reduced prices, and the willingness of the consumer to resume the purchase of needed commodities in normal volume at these reduced prices.

In the present industrial situation it seems inevitable that some unemployment must take place. The employee suffers most but the employer also bears a share of the misfortune. We should personally prefer, where action is necessary, to see partial operation of a plant rather than complete shut down, believing that Dusty Rhodes was quite right when he argued on finding it necessary to work three days a week, that "half a loaf is better than none."

#### A GOOD LESSON.

Our friend Robson Black, Secretary of the Canadian Forestry Association, tells an excellent fire prevention story. A gentleman called at the office of a friend, took the chair that was offered him, lit a cigar and threw the match into the waste basket. It happened to be a metal basket and contained considerable waste paper. Conversation began and so did something else. In a short time smoke was coming from the basket and the visitor became uneasy but his host paid no attention. When flames began to come from the basket, however, the visitor rose excitedly and asked the other man why he did not call somebody to put out the fire. He was politely told by his host that he had no intention of calling anybody but that a man who was careless enough to throw away a match in that fashion should put the fire out himself. The visitor then climbed into the waste basket, stamped out the fire and later bought a new pair of trousers.

It would be a fine thing if more people who are careless about fire were obliged to suffer the consequences themselves. This is just as true of those who permit accumulations of rubbish, either in the woods, the home or the plants, as it is those who furnish the spark.

#### COBWEBS.

Order those Safety Calendars NOW. Get one for each employee and each office and department. See if you can bury A. P. with orders. Address Pulp and Paper Makers Safety Association, 129 Spadina Ave., Toronto. The more you get the cheaper they are.

The report of the Federal Trade Commission on wall paper for October gives an average contract price of 167 $\frac{1}{2}$  cents. The American concerns handled 8,512 tons during the month.

The Brompton Pulp and Lumber Co., which has closed its saw mill for the winter, should not be confused with the Brompton Pulp and Paper Co., which is not only very busy but will soon have its new pulp mill working.

"The Crest" is the name of the interesting monthly publication of the Howard Smith Paper Mills, Ltd., Montreal. The name, with the well-known "Beaver S." trade mark, with the scroll, "The summit of paper quality," state the position in which the company would put its product in the minds of the public. The copies we have received are full of valuable information on paper and other subjects. Needless to say it is a fine job of printing.

From Vancouver to Wisconsin is a long way to haul pulpwood, but is really only about twice as far as wood is already shipped from points in Ontario and Quebec to mills in New York and Pennsylvania. There are timber areas in Western Canada where the haul would not be more than 50 per cent. greater.

The National Association of Purchasing Agents is so opposed to tipping that it has sent resolutions to Congress asking that "commercial bribery" be made a Federal penal offense.

The average attendance at the meeting of the Woodlands Section in Toronto last week, was over 100. All the big eastern mills were represented and there were a number of Americans and forestry students. Good work!

Children must have Christmas trees, it seems. We shall soon expect to see them practically all produced in nurseries, just as furs will come from fur farms.

(Isn't that amusingly ambiguous?)

# The Measurement of Pulpwood and the Determination of Yields Therefrom

**A Report made to the Committee on Uniform Cost Keeping of the News Print Service Bureau on November 8, 1920 by Dr. Otto Kress, of the Forest Products Laboratory, Madison, Wisconsin and Geo. D. Bearce, Engineer for the Bureau.**

At a previous meeting, attention was drawn to the wide divergence of methods used in obtaining information regarding the quantity of pulpwood used and pulp produced. Some companies measure the wood in racks and calculate the yield on the basis of an arbitrary number of pounds of pulp produced per cord. Other companies do not actually measure the wood used in any manner but figure the quantity consumed from the tonnage of paper made. This method necessitates a percentage factor to provide for shrinkage. Other methods are used also but all include a large percentage of estimates because they must deal with hitherto undetermined factors, two of which are the density of the wood and the solid cubical content of the cord. Therefore, the number of cords reported used does not represent the actual quantity of wood consumed and there is always the uncertainty as to whether the book inventories of pulpwood will check out at the time of cleaning up the block pile. Serious shortages and over runs in the book figures are found at the time of the clean up, which are caused by miscalculations in the volume of wood used in the first place as to the volume of wood used in a given time, the uncertainty continues into the pulp mill in the determination of pulp production figures.

It is common knowledge that the cause for all this uncertainty and estimation is because wood has been used on a volumetric basis with the cord as the unit of measurement. The solution of the problem is to determine not the cubic or cord measurement of the wood but the actual wood content. If this can be determined, there is then established a definite relation between the wood used and the pulp produced therefrom.

An investigation has therefore been carried on by the Bureau for the last six months in cooperation with the Forest Products Laboratory, having the following main objects in view:—

1. To establish the relation between the volume and the weight of a unit quantity of wood and the weight of the pulp produced therefrom.
2. To determine accurate and practical methods of sampling wood for moisture.
3. To determine adequate methods of obtaining the measurement of slush pulp either by weight or by volume.
4. To study and recommend practical means of weighing wood delivered in large quantities to the mill under varying conditions.

The importance of obtaining accurate information upon the actual quantity of wood used in the pulp mill is more fully appreciated when it is considered that the present cost of rossed pulp wood delivered to the mill varies between one and two cents per pound of wood figured on a bone dry basis. This means that now the cost of the one chief constituent of paper, approximates the price at which newsprint itself was

sold only a few years ago. The pulp and paper industry so far has paid far more attention to minor economies, such as sulphur consumption, the cost of colors, size and alum, etc., than to wood, the raw material, which is constantly increasing in cost. Extensive tests were made to obtain data under actual mill operating conditions upon the yield of groundwood and sulphite pulp that can be obtained from a given volume or weight of wood used and special attention was given to the amount of decay of the wood. The variation in moisture content of pulpwood under varying conditions of storage was also thoroughly studied.

The results of the work have been submitted to, and approved by an advisory committee consisting of:—  
J. S. Bates, Technical Superintendent, Price Bros., Ltd.

E. A. Charlton, Superintendent Paper Mill, Brompton Pulp and Paper Co., Ltd.

C. F. Rhodes, Manager of Bureau of Tests, International Paper Co.

J. P. Riley, Manager of Woodlands Dept., International Paper Co.

L. H. Shipman, Assistant to the Manager, Spanish River Pulp & Paper Mills, Ltd.

The present method of measuring pulpwood based on a cord piled 4' x 4' x 8' with a theoretical volume of 128 cubic feet is universally recognized as being extremely unsatisfactory. The volume in solid cubic content of a cord of wood piles 4' x 4' x 8' varies from 65 cubic feet to 95 cubic feet though under ordinary conditions the volume of the cord usually varies from 80 to 90 cubic feet. This is due to the variation in the diameter and length of the sticks of wood and the proportion of knots and crooks.

Recently one of the larger newsprint mills determined by actual trial that a cord piled 4' x 4' x 8' which had been previously assumed to contain 95 solid cu. ft. of wood actually contained a fraction under 90 cu. ft. representing an error of 5 6/7%. Sound spruce averages 26 lbs. per solid cu. ft. of bone dry wood so there was a discrepancy of 130 lbs. of actual wood substance per cord. On a daily consumption of 100 cords this represents 13,000 lbs. of wood equivalent to 6,500 lbs. of sulphite pulp or 11,700 lbs. of groundwood pulp. Assuming \$150.00 per ton for sulphite and \$120.00 per ton for groundwood as being the present market price, this difference in calculation represents \$480.00 per day for sulphite or \$700.00 per day for groundwood.

The investigation dealt extensively with the question of decay in wood. Recent studies by the Forest Products Laboratory, at Madison, Wisconsin of the decay of wood show that there is an appalling loss to the industry from this cause. Such losses should be correctly determined and this cannot be done by the cord or volume measurement of pulpwood, which, while undergoing decay suffers no change in volume, but does decrease decidedly in weight. Sealers attempt to estimate rot in wood but this is arbitrary and often incorrect.

Examination of a number of shipments of infected spruce wood shipped to the laboratory for pulping purposes showed a maximum variation in comparison with sound wood of 5 pounds per cu. ft. of bone dry

wood. Assuming the cord to consist of 90 solid cu. ft. this loss is equivalent to 450 lbs. of wood per cord. Assuming sound spruce wood to weigh 26 pounds per cubic foot or 2,340 pounds per cord, the loss of 450 pounds per cord represents a 19% loss on actual wood substance. It is unnecessary to show further the enormous loss this means to a mill using several hundred cords of wood daily.

In order to measure wood in terms of its bone dry weight it is absolutely necessary to devise an adequate and practical method for determining the moisture. For this purpose 550 separate moisture determinations were made by the disc and boring methods.

The disc method consists in cutting a cross sectional disc from a certain point in the log, weighing it wet, drying, and then weighing again, the difference in the two weights representing the moisture. This method is acknowledged to be theoretically correct but it is slow and costly. The more practical method was found to be, to bore a 3 $\frac{1}{4}$ " or larger hole from the circumference to the center or pith of the log. The shavings obtained by the borings were tested in the same way as the discs to determine the moisture. The boring method gives a bone dry weight averaging about 2% more than the disc method. This slight discrepancy can be allowed for in the computation of correct results. The time consumed in testing 4' wood by the boring method averaged about 30 minutes per ear of 12 cords or about 2 $\frac{1}{2}$  minutes per cord for the actual time of sampling.

During the investigation, representatives of the Bureau have discussed with various members and with the staff of the Forest Products Laboratory the soundness of principle involved in measuring wood by weight rather than by volume. We have found many members in complete accord with this method. It was deemed necessary, however, to make extensive pulping tests to substantiate and if necessary to further demonstrate its practicability. The tests were conducted at the following mills:—

Nekoosa-Edwards Paper Co.—for 10 weeks on Sulphite.

International Paper Co., Hudson River Mill—for 1 week on Sulphite.

International Paper Co., Milton Mill—15 days on Groundwood.

It is not necessary at this time to discuss all the details involved in making these tests. They will be found in the complete report. The tests involved the weighing of wood on track or platform scales, sampling for moisture, very carefully determining the quantity of pulp and screenings produced either in slush form or in laps, and the measurement of white water losses, etc. In order to obtain figures on slush production, the regulation of consistency of stock was given careful attention.

Owing to the length of the test at the Nekoosa-Edwards Plant we were able to obtain figures showing variations in production both per cord and per pound of wood used. The average yield of sulphite pulp per pound of bone dry wood after making an allowance for loss in barking of 13% was 13.4%. This figure is comparable to the results obtained in experimental tests by the Forest Product Laboratory.

The test on sulphite pulp at the Palmer Falls Plant of the International Paper Company confirmed the results reported at the Nekoosa-Edwards Plant, and

the average yield for the entire test was 44.2% per pound of bone dry peeled wood used.

At the Milton Mill of the International Paper Co. the yield of groundwood for the four runs show an average of 93.57% per lb. of bone dry wood. The maximum difference between the highest and lowest yields of the four runs was 3.45% per lb. of wood.

In the use of wood on the weight basis, equipment is of vital importance. This is necessary in order that the methods used may be economical, practical and as nearly automatic as possible. Various scales and other measuring devices are now on the market, some of which are in use in the paper industry. It is probable that apparatus used in other industries can be adapted for use in pulp and paper mills and all of this equipment will be described in detail in the full report of the investigation. At this time, it will suffice to mention one type of scale, among many, which has been used for several years with reliable results in the weighing of chips on a continuously moving belt conveyor and simultaneously recording their weights.

The cord method does not accurately determine the variation in solid cubic content and the loss due to decay cannot be accurately estimated by scaling. It has been demonstrated that wood can be accurately and quickly sampled for moisture content. This provides a definite basis of measurement and reduces to almost a negligible figure the inaccuracies unavoidable under the cord system. A weight basis is comparable to the present mill method of weighing coal, limestone, sulphur, alum and other raw materials which are of less cost and importance than the raw wood. Some of the advantages of using a weight basis for wood are:—

1. A definite determination of the actual quantity of solid wood used in the mill, thereby entirely overcoming the difficulty at present experienced in the measurement of wood on the indefinite cord basis, thus eliminating overruns or shortages in wood inventories.
2. The weight basis eliminates the present uncertainty in attempting to scale out the proper percentage of rot in a specified quantity of wood, as wood does not change in volume during decay but suffers a direct loss in weight in proportion to the amount of rot present.
3. The use of wood on a weight basis makes it possible to determine definitely the quantity of pulp which can be produced from a given amount of wood, thereby eliminating the uncertainty of the cord or volumetric basis.
4. The use of wood on a weight basis would be of very material assistance in putting the Pulp and Paper Industry on a scientific basis comparable to other similar industries and would immediately result in closer technical and mill control.
5. Correct quantities can be obtained for cost accounting purposes by the establishment of a logical relation between the weight of wood which is the raw material and the weight of pulp and paper which represents the finished commodity.
6. It would be very advantageous to a company that buys wood in car load lots to purchase on the weight basis as it would be protected against buying rotten wood.

It should however be emphasized that this is entirely distinct from the advantages of weighing wood after its delivery to the mill.

# How A Paper Mill Uses Periodicals

Miss Aileen B. Collins, Librarian of the Spanish River Pulp and Paper Mills, at Sault Ste. Marie, has prepared the following description on the methods employed for circulating, abstracting and filing periodical literature.

The importance of a system through which information regarding all phases of paper industry can be brought to the attention of executives is emphasized by the repeated demands for summaries of various articles which appear in the current periodicals which are circulated throughout mill and offices.

These magazines remain but one day in each department and very often the executive has only sufficient time to read the article by title. Generally, too, there is not sufficient space in which to file these periodicals for easy reference.

It was this need which led to the establishment of a system of abstracting, now in use, whereby articles published in any magazine can be abstracted and the abstract sent to the enquirer within 24 hours.

## Circulation of Periodicals.

Immediately on receipt magazines are started in circulation. Originally they were sent to every department, and as they were read, any article containing information of use or interest to any department was initialed, the periodicals continuing in circulation. This worked out fairly well but it was found that more speed could be gained if the magazines were circulated according to departmental requirements. For example the Engineering magazines are of particular interest in the Engineering departments but of little or no interest in the Sales or Purchasing Departments. This idea was tried out and such results were obtained that it was adopted.

In order to keep these abstracts in good order, the revised classification system of the Canadian Pulp & Paper Association was adopted and each abstract classified in accordance with the sixteen classes or main divisions in this system.

The interest in this system is apparent by the number of abstracts requested by the different department heads and the type of abstract going to the different departments. Those going to the Management are of a general character, to the Quality and Products Department abstracts relative to the technical and efficiency problems of the industry, those going to the Engineering Departments deal with engineering problems and methods; to the Forestry Department, ways and means of fighting forest fire and conserving the forest. By the use of abstracts the Sales Department is kept in touch with market prices and quotations and in like manner each department has in its file a series of abstracts of direct importance and interest. A copy of all abstracts is filed in the office of the abstractor for general reference purposes.

There is the leaf index in which complete articles are torn from the magazine, indexed and filed according to classification. Complete information regarding many vital problems is thus at hand for ready reference.

In the same way abstracts published in the magazines are cut out, saved, and pasted on a card 4" x 5", also any other information that may be procured. In this

way there is built up a very expandable file with direct information as to the source of the original article or information on any subject that may be brought up for discussion.

These magazines after having finished their circulation route are returned to the abstracting office and filed according to their date and title. Any one wishing to borrow one, to read some article at leisure, may do so by applying to the Librarian and having a memo of the name and date of the magazine and probable date of return to file.

An alternative method would be to prepare abstracts prior to circulation of the periodical. This method has been under consideration but does not appear to be as efficient or to fit the need of the organization as well as the plan in use.

## CLASSIFICATION OF ABSTRACTS AND LITERATURE FOR INDEXING AND FILING.\*

\* As requests for this information are frequently received by the editor, this seemed a good opportunity to make it available. Suggestions for improving the classification will be welcome.

The following classification is according to the method approved by the Technical Section of the Canadian Pulp and Paper Association. Where an article applies to more than one subject, it should be cross-indexed by title.

### A.—PROPERTIES, CHEMISTRY AND TESTING OF RAW MATERIALS, AND FINISHED PRODUCT.

- A 1 WOOD
- A 2 RAGS
- A 3 STRAW AND SIMILAR RAW MATERIALS
- A 4 CHEMICAL WOOD PULP
- A 5 MECHANICAL WOOD PULP
- A 6 FUEL
- A 7 LIMESTONE, LIME, SULPHUR AND PYRITES.
- A 8 SULPHATE AND SODA.
- A 9 BLEACH AND SALT
- A 10 WATER
- A 11 CLAY OTHER FILLERS AND COATING MATERIALS
- A 12 SIZE, ALUM, GLUE, ROSIN, STARCH AND CASEIN.
- A 13 DYES AND COLOR
- A 14 PAPER AND MANUFACTURES THEREOF.
- A 15 CELLULOSE AND PRODUCTS THEREOF.
- A 16 BUILDING MATERIAL AND METALS
- A 17 OILS AND LUBRICANTS
- A 18 CHEMICALS
- A 9 MISCELLANEOUS

### B—FORESTRY.

- B 1 BOTANY.
- B 2 SYLVICULTURE (REFORESTATION)
- B 3 PROTECTION (CONSERVATION)
- B 4 UTILIZATION
- B 5 TECHNOLOGY (LUMBERING, LOGGING, ETC.)
- B 6 ENGINEERING (SURVEYING, ETC.)
- B-7 MANAGEMENT
- B 8 GRAZING.
- B-9 ECONOMICS AND STATISTICS (POLICY, RESOURCES LAWS ETC.)
- B-0 MISCELLANEOUS

### C—WOOD PREPARING AND EQUIPMENT.

- C-1 MANUFACTURING CONTROL AND TESTS.
- C-2 BY-PRODUCTS
- C-3 CONSUMPTION OF RAW MATERIAL UNIT POWER AND YIELD
- C-4 WOOD MEASUREMENT
- C-5 TRANSPORTATION AND STORING
- C-6 SLASHING AND SAW MILLS
- C-7 BARKING AND CLEANING
- C-8 CHIP PREPARING
- C-0 MISCELLANEOUS

D—GROUND WOOD MANUFACTURING AND EQUIPMENT.

- (Note.—For pulp treatment and drying see Class G.)
- D 1 MANUFACTURING CONTROL AND TESTS.
  - D 2 BY-PRODUCTS.
- D-3 CONSUMPTION OF RAW MATERIAL, UNIT POWER AND YIELD.
  - D 4 GRINDING, GRINDERS AND STONES.
  - D 5 WOOD TREATMENT FOR GRINDING.
  - D-6 MISCELLANEOUS.

E. SULPHITE MANUFACTURE AND EQUIPMENT.

- (Note.—For pulp treatment and drying see Class G.)
- E 1 MANUFACTURING CONTROL AND TESTS.
  - E-2 BY-PRODUCTS.
- E 3 CONSUMPTION OF RAW MATERIAL, UNIT POWER AND YIELD.
  - E 4 ACID MAKING AND RECOVERY.
  - E 5 COOKING.
  - E-6 MISCELLANEOUS.

F—SODA AND SULPHATE MANUFACTURE AND EQUIPMENT.

- (Note.—For pulp treatment and drying see Class G.)
- F-1 MANUFACTURING CONTROL AND TESTS.
  - F-2 BY-PRODUCTS.
- F-3 CONSUMPTION OF RAW MATERIAL, UNIT POWER AND YIELD.
  - F 4 LIQUOR MAKING AND RECOVERY.
  - F-5 COOKING.
  - F-6 MISCELLANEOUS.

G—PULP TREATMENT AND DRYING—OPERATION AND EQUIPMENT.

(Note.—For manufacture of pulp and equipment for same see Classes D, E, F.)

- G-1 MANUFACTURING CONTROL AND TESTS.
  - G-2 BY-PRODUCTS.
- G-3 CONSUMPTION OF RAW MATERIAL, UNIT POWER AND YIELD.
  - G-4 PULP HANDLING AND CONVEYING.
  - G-5 WASHING AND CONCENTRATING.
- G-6 SCREENING AND RIFFLING (SEE ALSO K 11).
  - G-7 REFINING.
  - G-8 WET MACHINES.
  - G-9 DRYING MACHINES.
  - G-10 PRESSING AND BALING.
  - G 11 SAVE-ALLS (SEE ALSO K 13).
  - G 12 SHIPPING, STORING AND WEIGHING.
  - G 13 PULP, QUALITY AND GRADING.
  - G-9 MISCELLANEOUS.

H—BLEACHING, BLEACH MANUFACTURING AND EQUIPMENT.

- H 1 MANUFACTURING CONTROL AND TESTS.
  - H 2 BY-PRODUCTS.
- H 3 CONSUMPTION OF RAW MATERIALS, UNIT POWER AND YIELD.
  - H 4 BLEACH MANUFACTURING.
  - H 5 BLEACHING.
  - H-6 MISCELLANEOUS.

K—PAPER MANUFACTURING AND EQUIPMENT. (Note.—See also Class G.)

- K 1 MANUFACTURING CONTROL AND TESTS.
  - K 2 BY-PRODUCTS.
- K 3 CONSUMPTION OF RAW MATERIAL, UNIT POWER AND YIELD.
  - K 3 BOILING AND WASHING.
- K 5 PULPERS, SHREDDERS AND CHESTS.
- K 6 SPECIAL TREATMENT OF FIBROUS MATERIALS.
  - K 7 BEATING AND REFINING.
  - K 8 COLORING.
  - K-9 LOADING.
  - K-10 SIZING.
- K 11 SCREENING, (SEE ALSO G 6).
  - K 12 PAPER MACHINES.
  - K 13 SAVE-ALLS (SEE ALSO G 11).
- K 14 FINISHING AND INCIDENTAL OPERATIONS.
- K 15 NEWSPAPER AND HANGING.
- K 16 KRAFT AND WRAPPING PAPERS.
- K 17 WRITING BOND AND BOOK PAPERS.
- K 18 BOARDS.
- K 19 COATED AND PROCESSED PAPERS.
- K 20 GREASE PROOF AND PARCHMENT PAPERS.
- K 21 BUILDING AND ROOFING PAPERS.
  - K 22 TISSUES.
- K 23 SPECIAL PAPERS AND TREATMENT THEREOF (SEE ALSO CLASS L).

- K-24 PACKING WAREHOUSING AND SHIPPING.
  - K-6 MISCELLANEOUS.

L—ARTICLES PRODUCED FROM PULP AND PAPER.

- L-1 MANUFACTURING CONTROL AND TESTS.
  - L-2 BY-PRODUCTS.
- L-3 CONSUMPTION OF RAW MATERIAL, UNIT POWER AND YIELD.
  - L-4 CONTAINERS FROM PAPER AND PULP.
  - L-5 ARTIFICIAL SILK AND OTHER CELLULOSE PRODUCTS.
  - L-6 PAPER MACHE AND MOLDED PRODUCTS.
  - L 7 PAPER YARNS AND PRODUCTS THEREOF.
  - L-6 MISCELLANEOUS.

M.—GENERAL EQUIPMENT.

- M 1 MANUFACTURING CONTROL AND TESTS.
  - M-2 BY-PRODUCTS.
- M-3 CONSUMPTION OF RAW MATERIAL, UNIT POWER AND YIELD.
  - M-4 MECHANICAL TRANSMISSION.
  - M-5 REPAIR SHOP AND ACCESSORIES.
- M 6 ELECTRIC TRANSMISSION, MOTORS AND ACCESSORIES.
- M-7 HEATING VENTILATION AND LIGHTING.
  - M-8 PUMPS.
- M 9 TRANSPORTATION IN MILL AND YARD.
  - M-10 FIRE PROTECTION.
  - M-10 MISCELLANEOUS.

N.—POWER GENERATING AND EQUIPMENT.

- N-1 MANUFACTURING CONTROL AND TESTS.
  - N-2 BY-PRODUCTS.
- N-3 CONSUMPTION OF RAW MATERIAL, UNIT POWER AND YIELD.
  - N-4 BOILER HOUSE.
  - N-5 COAL AND ASH HANDLING.
  - N-6 STEAM POWER PLANTS.
  - N-7 HYDRO POWER PLANT.
- N 8 INTERNAL COMBUSTION ENGINE PLANTS.
- N-9 ELECTRIC POWER EQUIPMENT.
  - N-10 MISCELLANEOUS.

O—WATER SUPPLY AND EQUIPMENT.

- O-1 WATER WORKS.
  - O-2 FILTER PLANTS.
- O-3 PURIFICATION AND SOFTENING PLANTS.
  - O-4 MISCELLANEOUS.

P.—SAFETY ENGINEERING AND EDUCATION.

- P-1 SAFETY APPLIANCES.
- P 2 EDUCATION AND HYGIENE.
- P 3 SOCIAL WELFARE.
- P 4 HOSPITAL AND FIRST AID.
- P-5 SAFETY STATISTICS.
- P-6 MISCELLANEOUS.

Q.—PLANNING AND CONSTRUCTION.

- Q 1 TOWN PLANNING AND BUILDING.
- Q 2 MILL PLANNING AND BUILDING.
- Q 3 CONSTRUCTION COST.
- Q-4 MISCELLANEOUS.

R.—GENERAL.

- R 1 DESCRIPTION OF MILLS AND ITEMS RELATING THERETO.
  - R 2 BIOGRAPHY AND LITERATURE.
    - R-3 OFFICE SYSTEM.
  - R 4 BUSINESS RELATIONS.
- R 5 STATISTICS AND MARKET REPORTS.
  - R 6 MANUFACTURING SYSTEM.
    - R-7 LABOR.
  - R-8 TRANSPORTATION AND FREIGHT RATES.
    - R-9 TARIFFS AND TAXES.
  - R 10 FINANCING AND INVESTMENTS.
    - R 11 INSURANCE.
  - R 12 MANUFACTURING COSTS.
  - R 13 SOCIETIES AND ASSOCIATIONS.
  - R-4 MISCELLANEOUS.

INDEX OF SUBJECTS FREQUENTLY USED.

A.		
Acid Making	.....	E — 4
Air planes	.....	R — 3
Adhesives	.....	A — 12
Alcohol	.....	E — 2
Analysis, by sub-classes	.....	A, or A-0
Apparatus, Miscellaneous	.....	M — 0



Articles made from Pulp and Paper . . . . .	L	—	Filter Plants . . . . .	O	—	2
Artificial silk and other cellulose products . . . . .	L	—	Financing . . . . .	R	—	10
Ash—handling . . . . .	N	—	Fire Proofing . . . . .	K	—	23
Associations . . . . .	R	—	Fire Protection . . . . .	M	—	10
			First Aid and Hospital . . . . .	P	—	4
	<b>B.</b>		Flax . . . . .	A-3; K-6		
Bags . . . . .	L	—	Flour, Wood . . . . .	R	—	0
Baling and Pressing of Pulp . . . . .	G	—	Forest Botany . . . . .	B	—	1
Barking . . . . .	C	—	Forest Economics, Statistics and Laws . . . . .	B	—	9
Beating . . . . .	K	—	Forest Engineering . . . . .	B	—	6
Biography . . . . .	7		Forest Management . . . . .	B	—	7
Bleach Manufacturing . . . . .	H	—	Forest Protection . . . . .	B	—	3
Bleach, Chemistry and Testing . . . . .	A	—	Forest Utilization . . . . .	B	—	4
Bleaching . . . . .	H	—	Forestry . . . . .	B		
Board . . . . .	K	—	Freight Rates . . . . .	R	—	9
Boiler House . . . . .	N	—	Fuel, Testing and Properties of . . . . .	A	—	6
Boiling (Rags) . . . . .	K	—	Fungus . . . . .	A-1; C-5		
Bond Paper . . . . .	K	—		<b>G.</b>		
Book Paper . . . . .	K	—	General . . . . .	R		
Botany, Forest . . . . .	B	—	General Equipment . . . . .	M		
Bronze . . . . .	A	—	Glue . . . . .	A	—	12
Brush, Disposal . . . . .	B	—	Grading of Pulp . . . . .	G	—	13
Budworm . . . . .	B	—	Grasses for Pulp . . . . .	A	—	3
Building Materials, Properties and Testing . . . . .	A	—	Grease Proof and Parchment . . . . .	K	—	20
Building and Mill Planning . . . . .	Q	—	Grinding, Grinders and Stones . . . . .	D	—	4
Building Paper . . . . .	K	—	Ground Wood, Manufacture and Equipment . . . . .	D		
Building and Town Planning . . . . .	Q	—		<b>H.</b>		
Burners, Sulphur . . . . .	E	—	Hanging and Newsprint . . . . .	K	—	15
By-Products. See various groups of manufacturing	2		Heating and Ventilation . . . . .	M	—	7
			Hospital and First Aid . . . . .	P	—	4
	<b>C.</b>		Hydro Power Plants . . . . .	N	—	7
Camp, Wood Operation and equipment . . . . .	B	—		<b>I.</b>		
Cattle Food . . . . .	A	—	Insurance . . . . .	R	—	11
Causticizing . . . . .	F	—	Internal Combustion Engine Plants . . . . .	N	—	8
Cellulose, Chemistry and Testing . . . . .	A	—		<b>J.</b>		
Cellulose Manufacture . . . . .	E and F		Jute . . . . .	A-3; K-6		
Cellulose products . . . . .	L	—		<b>K.</b>		
Cement and Concrete . . . . .	A 16; Q-4		Kraft and Wrapping Paper . . . . .	K	—	16
Chemistry, General Analysis, etc. . . . .	A	—		<b>L.</b>		
Chemistry and Testing of Raw Materials, Building Materials and Finished Products . . . . .	A	—	Labor . . . . .	R	—	7
Chemistry of Manufacture. See various groups of manufacturing			Laws and Stumpage (Forestry) . . . . .	B	—	8
Chemicals, Chemistry and Testing . . . . .	A	—	Lighting . . . . .	M	—	7
Chemical purification of water . . . . .	O	—	Lignin . . . . .	A-1; E-2		
Chemical Wood Pulp—Chemistry and Testing . . . . .	A	—	Lime and Limestone . . . . .	A	—	7
Chemistry . . . . .	A	—	Liquor Making (Soda and Sulphate Mfg.) . . . . .	F	—	4
Chests . . . . .	K	—	Literature . . . . .	R	—	4
Chip Preparing . . . . .	C	—	Loading, Paper Mfg., (Fillers, see A-11) . . . . .	K	—	9
Clay, Chemistry and Testing . . . . .	A	—	Logging . . . . .	B	—	4
Cleaning and Barking (Wood) . . . . .	C	—	Lubricants, Chemistry and Testing . . . . .	A	—	17
Coal . . . . .	A-6, N-4, N-5		Lumbering . . . . .	B	—	4
Coating Materials, Properties and Testing . . . . .	A	—		<b>M.</b>		
Coated Paper . . . . .	K	—	Manufacturing Control and Tests. See various Manufacturing groups . . . . .	1		
Coloring . . . . .	K	—	Manufacturing Costs . . . . .	R	—	12
Colors, Properties and Testing . . . . .	A	—	Manufacturing System . . . . .	R	—	6
Concentrating of Pulp (Thickeners) . . . . .	G	—	Measurement of Wood . . . . .	C	—	4
Concrete . . . . .	Q	—	Mechanical Transmission . . . . .	M	—	4
Colloids . . . . .	A-11, A-10, K-10		Mechanical Wood Pulp Chemistry and Testing . . . . .	A	—	5
Containers of Pulp and Paper . . . . .	L	—	Metals, Chemistry, Testing and Properties . . . . .	A	—	16
Control and Tests in Manufacturing. See Class A and various groups.			Meters . . . . .	M	—	0
Consumption of Raw Material and Unit Power. See various groups of Manufacturing	3		Mills, description of . . . . .	R	—	1
Conveying and Handling Pulp . . . . .	G	—	Mill Planning and Building . . . . .	Q	—	1
Cookers, gas . . . . .	L	—	Minerals . . . . .	A	—	0
Cooking Soda and Sulphate . . . . .	F	—	Motors, Electric and Accessories . . . . .	M	—	6
Cooking Sulphite . . . . .	E	—		<b>N.</b>		
Cost, Construction . . . . .	Q	—	Newspaper and Hanging . . . . .	K	—	15
Cost, Manufacturing . . . . .	R	—	Nitre Cake . . . . .	A-18; F-4		
	<b>D.</b>			<b>O.</b>		
De-fibering Machines . . . . .	K	—	Office Systems . . . . .	R	—	1
De-inking of Waste Papers . . . . .	K	—	Oils and Lubricants, Chemistry and Testing . . . . .	A	—	17
Description of Mills . . . . .	R	—		<b>P.</b>		
Drying of Pulp . . . . .	G	—	Paper, Chemistry and Testing . . . . .	A	—	14
Dyes, Chemistry and Testing . . . . .	A	—	Paper, Articles made from Pulp and Paper . . . . .	L		
	<b>E.</b>		Paper Maché, and Similar Products . . . . .	L	—	6
Education and Hygiene . . . . .	P	—	Paper Machine . . . . .	K	—	12
Electrical Equipments . . . . .	N	—	Paper Manufacturing and Equipment . . . . .	K		
Electrical Transmission, Motors, etc. . . . .	M	—	Paper Specialties (see also L) . . . . .	K	—	23
Esparto . . . . .	A-3, K-4		Parchment and Grease Proof . . . . .	K	—	20
	<b>F.</b>		Paper Yarns and Products of same . . . . .	L	—	7
Felts . . . . .	K	—	Photography . . . . .	R	—	0
Fibrous Materials, Properties and Testing . . . . .	A	—	Planning and Building . . . . .	Q	—	2
Fibrous Materials, Special Treatment for Paper making . . . . .	K	—	Planting, Forest . . . . .	B	—	2
Fillers, Chemistry and Testing of . . . . .	A	—	Power Generating and Equipment . . . . .	N		
			Power Consumption (see various groups of Mfg.) . . . . .	3		
			Power Transmission . . . . .	M	—	4, 6

Pressing and Baling of Pulp . . . . .G — 10  
 Protection of Forests . . . . .B — 3  
 Protection (Fire) . . . . .M — 10  
 Pulp, Analysis and Properties . . . . .A — 4, 5  
 Pulp, Handling and Conveying . . . . .G — 4  
 Pulp, Mechanical . . . . .D  
 Pulp, Quality and Grading . . . . .G — 13  
 Pulp Shredders and Chests . . . . .K — 5  
 Pulp, Soda . . . . .F  
 Pulp, Sulphate . . . . .E  
 Pulp, sulphite . . . . .E  
 Pulpers . . . . .K — 5  
 Pumps . . . . .M — 8  
 Pyrites, Chemistry and Testing . . . . .A — 7

**Q.**  
 Quality and Grading of Pulp . . . . .G — 13

**R.**  
 Rags, Properties, etc . . . . .A — 2  
 Railroad and Transportation . . . . .R — 8  
 Raw Materials, Chemistry and Testing . . . . .A  
 Raw Materials, Consumption of (see various groups of Manufacturing) . . . . .3  
 Records and Reports Office . . . . .R — 3  
 Records and Reports Mill . . . . .R — 6  
 Recovery and Acid Making Sulphite . . . . .E — 4  
 Recovery and Liquor Making Soda and Sulphate . . . . .F — 4  
 Reinforced Paper . . . . .K — 23  
 Reforestation . . . . .B — 2  
 Refining (Paper Manufacturing) . . . . .K — 7  
 Refining (Pulp Preparing) . . . . .G — 7  
 Regulators for Stock . . . . .K — 12  
 Repair Shop and Accessories . . . . .M — 5  
 Research . . . . .R — 0  
 Riffling . . . . .G — 6  
 Roofing Paper . . . . .K — 12  
 Rosin, (resin) . . . . .A-12, K-10

**S.**  
 Safety Appliances . . . . .P — 1  
 Safety Engineering . . . . .P  
 Safety Statistics . . . . .P — 5  
 Salt, Chemistry and Testing . . . . .A — 9  
 Sampling (see sub-classes of materials) . . . . .A  
 Save-all, Pulp Preparing . . . . .G — 11  
 Save-all, Paper Manufacturing . . . . .K — 13  
 Screening and Riffling (see also K-11) . . . . .G — 6  
 Shipping and Storing of Pulp . . . . .G — 12  
 Shredders . . . . .K — 5  
 Silicate . . . . .A-12; K-10; K-15  
 Size, Chemistry and Testing . . . . .A — 12  
 Sizing . . . . .K — 10  
 Slash, Forest, Disposal . . . . .B — 2  
 Slashing and Saw Mills . . . . .C — 6  
 Social Welfare . . . . .P — 3  
 Solutions, daily (see various groups) . . . . .1  
 Specialties, Paper (see also L) . . . . .K — 23  
 Special Treatment of Fibrous Material for Paper Making . . . . .K — 6  
 Starch . . . . .A-12; A-0 K-10  
 Statistics and Market Reports . . . . .R — 5  
 Statistics, Forestry . . . . .B — 9  
 Steam Plants . . . . .N — 6  
 (Boilers, see N-4).  
 Stones, Grinding and Grinders . . . . .D — 4  
 Storing Wood . . . . .C — 5  
 Straw and similar Raw Materials, Chemistry and Testing . . . . .K — 3  
 Straw etc, cooking . . . . .A — 6  
 Stumpage and Laws . . . . .B — 9  
 Sulphur, Chemistry and Testing . . . . .A — 7  
 Sulphite, Manufacturing and Equipment . . . . .E  
 Sylviculture . . . . .B — 2

**T.**  
 Taff and Freight Rates . . . . .R — 9  
 Testing and Chemistry of Raw Materials, Building Materials and Finished Products . . . . .A  
 Testing of Manufacturing (see various groups of Mfgs) . . . . .1  
 Textiles of Fibre Silk . . . . .L — 7  
 Textiles of Yarn . . . . .L — 7  
 Tissue Paper . . . . .K — 22  
 Transportation in Mill and Yard . . . . .M — 9  
 Transportation and Storing . . . . .R — 8  
 Transportation and Railroad . . . . .C — 5  
 Trouble . . . . .R — 4  
 Turpentine . . . . .A-9, I-2, F-2

**U.**  
 Unit Power, Consumption of (see various groups of Manufacturing) . . . . .3

**V.**  
 Ventilation, Heating and Lighting . . . . .M — 7  
 Viscose . . . . .A-15; 2-5  
 Vulcanized Fibre . . . . .K — 22

**W.**  
 Washing and Concentrating (Thickeners) . . . . .G — 5  
 Waste Liquors . . . . .E — 2  
 Waste Papers, De-inking and Pulping . . . . .K — 6  
 Waste Products (see various groups of Mfg.) . . . . .2  
 Water, Analysis . . . . .A — 10  
 Waterproofing . . . . .K — 23  
 Water Marks . . . . .K — 12  
 Water Supply and Equipment . . . . .O  
 Water Works . . . . .O — 1  
 Wet Machines . . . . .G — 8  
 Wood, Properties and Analyses . . . . .A — 1  
 Wood, Measurement . . . . .C — 4  
 Wood, Operation, Camp and Equipment . . . . .B — 9  
 Wood, Preparing and Equipment . . . . .C  
 Wood, Utilization . . . . .B — 4  
 Wrapping and Kraft Paper . . . . .K — 16  
 Writing, Bond and Book Paper . . . . .K — 17

**Y.**  
 Yarn, Paper and Products of same . . . . .L — 7  
 Yield (see various grades of Manufacturing) . . . . .3  
 (Extra copies of this classification are available at 10 cents each.)

**UNIVERSITY OF BRITISH COLUMBIA INAUGURATES A DEPARTMENT OF FORESTRY.**

H. R. Christie, F.E., now assistant chief forester in the provincial department of land has been appointed associate professor of forestry in the University of Columbia. Professor Christie will have associated with him members of the staff in engineering, botany, biology, chemistry and other related subjects.

Professor Christie graduated in forestry in Toronto University eight years ago. He had a two-year course at Ontario Agricultural College, taking his diploma in 1908, followed by a four year university course. During 1911 he was in the C. P. R. forest service and the next year the commission of conservation. In 1913 he entered the B. C. Forest Service remaining 3 years when he joined the expeditionary force and proceeded overseas. On 1916-1917 and the first part of 1918 he was lieutenant with the 8th Field Company C. E., in France. In 1918 he was called to Seaford to become instructor in the Canadian School of Military Engineering. From September 1918 to June 1919 he was with the 16th Field battery C. E. F., Siberia with rank of Captain. Returning last year to the forest service in British Columbia he became assistant chief forester on the promotion of Mr. Caverhill to the chief forester's position. Professor Christie is a native of Amherst, Nova Scotia.

The new department now put into operation by the board of governors of the University of B. C., should result in much good. This should tend to keep young men in the province that have planned to go to other universities to take this course. The writer knows of one young chap that spent this Summer in one of the large Pulp and Paper plants getting practical knowledge and this Winter went to Seattle to take a forestry course in the University of Washington because he could not get what he wanted here. The new course is well worth while for the young man that is interested in the subject. It will be the young man who takes such a course who will reap the benefit of the future development of the forestry resources of the province.

# The Business of Forestry in Sweden

An Address by Mr. H. Graeslund before the Woodlands Section of the Canadian Pulp and Paper Association, in Toronto, Dec. 8 and 9, 1920.

To begin with I wish to tell you, gentlemen, that I have accepted the very kind invitation to read a paper at this meeting with very great pleasure. I have been received with such splendid hospitality and kindness from everybody I have met with in this country that gradually there has grown a very great desire in my mind to get a chance of showing my gratitude. And so when I got this invitation my first spontaneous thought was that here perhaps I would get a chance to be of some little use for my friends in the pulp and paper business of Canada. I know very well that this thought is rather conceited, but I trust you will excuse me as my motive is a rich and warm feeling of friendship for Canada and the Canadians.

My intention is to give you a very short description of Swedish reforestation, its development and present situation. But before trying to do so I should like to tell you my very simple opinion on Canadian reforestation problems.

There is one question which I have never failed to ask every one of my Canadian friends:

Has Canada got sufficient resources of forests to supply lumber-consuming industries with raw material, without providing for regrowth of her forests?

The invariable answer has been: "No."

Why, if that be true, it is quite evident that only good reforestation methods will enable the further development and maintenance through a considerable time of this splendid industry. Furthermore I have been told that many of your best situated forests may be exhausted in something like 40 years.

Eventually the reforestation problems must be looked upon from the point of view that Canada's forests are one of her richest and finest natural resources, upon which her national wealth is largely dependent, as well as the future of a proud industry in which hundreds of million of dollars are invested.

Put briefly: reforestation seems to be one of the greatest economic questions at present in Canada, and it is a public affair as well as a private interest of very great importance.

In Sweden we had to face the same situation quite a long time ago. Our lumber industry is older than yours, and as much as 40 or 50 years ago we slowly began to realize what the bitter end would be if we did not tackle the reforestation problem somehow or other. But it is really during the last 25 years that modern methods to an important and remarkable extent have been developed. I would not tell you the truth if I said that everything in Sweden at present is ideal as regards forestry. But simply because we have been experimenting and working for some time our methods may be of some interest and use for you. Of course conditions are very different in the two countries, but the principles, the aim and the main lines are no doubt very much the same.

Of the 41 million hectars (1 hectar = 247 acres) constituting that total area of Sweden, if the innumerable inland waters be neglected, it is estimated that 21.6 or about 52 per cent is covered by forests. This makes 392 hectars per 100 inhabitants, the average figure for Western Europe being only 37. Of the Swedish forests about 37.5 per cent belong to the State,

1.9 per cent to towns and parishes, and 60.6 per cent to private individuals.

By far the greater part of the forest resources are to be found in the northern half of Sweden, where the climatic and other conditions are very similar to those in Canada. The transport of the logs from the forests to the mills is provided for in an excellent way through innumerable rivers going from west to east. Sweden's prominent position in the world's timber trade to a very large degree depends upon these 19,000 miles of excellent floating ways which at a very low cost carry the timber down to the mills. Most of the mills are concentrated at the mouths of the rivers, or very close to the coast of the Baltic. These mills get their raw materials direct from the river and ship their products from quays a few yards from their doors.

The rivers are estimated to be able to supply water power amounting to 6½ to 10 million horse power available during six months of the year.

By this brief statistical information you may have got some idea of the general conditions, and it may be time to turn to the subject.

Reforestation is a difficult problem. What you do to your forest to-day won't show its results until 50 or 100 years hence. Reforestation means one generation's work for coming generations. It does not appeal to our business sense at once and it takes quite a long time to realize that it is a first rate investment for the lumbering industry. Therefore, it is necessary that the State herself takes the lead, dictates the outlines for the nation's forestry policy. Co-operation between the State and private interests to the benefit of both is the first necessary supposition.

At home the Government has found three ways to do her part of the work: i.e. Legislation, education and the management of her own forests.

LEGISLATION.—The legislation concerning private forests has, in the past, gone through highly remarkable phases of development. From complete freedom about three hundred years ago, they were by degrees made an object of increasingly severe legislation, and finally even lumber felling for household purposes was placed under the control of the State. Then followed a revision which at last once more led to nearly complete freedom. During the last five decades a reaction has set in, imposing several restrictions upon private forest owners with regard to the management of their forests.

Modern legislation has taken into consideration how different conditions exist in different parts of the country and tried to apply laws according to these conditions.

In Lapland, the northern districts of Sweden, it was ordained in 1873 that farm owners should not enjoy other rights to the woods on their farms than those of taking without previous official survey such timber as they might require for household needs and for fuel, and of appropriating, subsequent to official surveying and marking for the purpose of selling such timber in addition as can be annually felled without danger to the future preservation of the forests.

In this way the farm forests which form a very considerable section of the forests of the north have been

subject to regulations ensuring system to the lumbering there. The immense importance of this will be seen more clearly when it is remembered that these forests are situated in the immediate neighborhood of the Scandinavian Alps which renders their preservation invaluable as protection against over-severity of climate.

It may be pointed out in connection with this that exhaustion seriously affects the soil and the climate in a bad way. I won't go into any particulars whatever as I am sure you know this thing better than I do, but I will take the opportunity of pointing out which tremendous responsibility there is connected with the management of the forests of a nation. Millions of men and women are dying this year in the far East. Why? Because their forefathers did not possess the necessary feeling of citizenship and responsibility for their sons and their country to preserve their forests. And especially nations which have developed agriculture extensively must be careful with their forests as their exhaustion seriously affect the soil and the climate.

A purely dimension law has been enacted for the coast districts of Lapland. This enactment forbids the shipping and the sawing at export saw mills and the employment for the purpose of manufacturing wood-pulp, of pine and spruce timber which at a height of 4.75 meters from the base, does not measure at least 21 cm. in diameter, the bark not included. The penalty for the infringement of this regulation is the confiscation of the timber. Such a law directed as it is against a special form of mismanagement of forests, can easily become a hindrance for the proper care of the timber, which in many places requires the removal of second-rate wood in order that space may be secured for the growth of healthy young trees. The law does not overlook this fact, however, as it instructs the owner of timber in a way that requires the felling of second-rate wood, so as to promote the growth of the healthy timber, if he wishes to ship or saw such second-rate wood, to apply to the proper state-forester, who will then make such a survey of the forest as circumstances may require. This forester selects and stamps the second-rate timber that is allowed to be cut. The State pays the cost for this survey on condition that the owner has arranged the forest in sections for the purpose of being cut in proper rotation and in accordance with a plan approved by the Government Forest Service.

In 1903 a law was passed respecting the so-called "protective forests" the existence of which are a protection against drifting sand, or the lowering of the tree-limit on the high mountains. The law enjoins that timber felling for other than domestic purposes may take place only after a survey and marking of the trees to be cut by the Government Forest Service at the cost of the State.

The other private forests in Sweden are subject to the regulations of the law of 1903, respecting the care of private forests. According to this law, in forests belonging to private persons, lumbering must not be carried on in such a way, nor, subsequent to lumbering operations, may the ground be so treated, as to clearly endanger the regrowth of the timber. If there has been such mismanagement of the forest, the guilty person is obliged to take the steps necessary to secure the regrowth. If the lumbering rights have been made over by the owner of the forest to another person, the owner is responsible for the necessary restorative measures being taken. The burden of seeing that the law in question is properly carried out rests on the Forest

Conservation Board, which must exist in every county council district. Besides being entrusted with this task the said Boards have also to promote the proper economy of the private forests by spreading a knowledge of forestry, by making grants in aid of the work of culture, by supplying seeds and plants, etc.

**EDUCATION.**—Every part of modern economies requires thorough education. A modern mill requires well trained engineers, modern forestry needs highly educated forestry men. As regards preservation and regrowth of the forests, the expenses for this purpose are identically the same as the money the mill manager has to pay for repairs and maintenance of machines and mills.

All schools and colleges in Sweden, with very few exceptions, are state institutions. The same with regard to instruction in Forestry. The higher forestry education is provided for at the College of Forestry in Stockholm. The number of students admitted to this college is limited to the probable number of opportunities for their employment so that there is a considerable competition for the opportunity of entering and a high standard of men and work is maintained. There are a higher and a lower course, the first supposed to educate State foresters, the second especially intended for the training of private forest officials. The instruction is both theoretical and practical, including the following subjects: Forest Management, Forest Mathematics, Forest Technology, Forest Botany, Forest Zoology, The Science of Soils, Forest Policy, General Legislation, Book-keeping, Technical Chemistry and Agricultural Economy. The practical work is done during summer time out in forests specially devoted to the purpose in different parts of the country. Journeys are made under the direction of the teachers to study the methods of different companies.

The lower State Schools of Forestry are directed mainly to giving the pupils practical skill in the more important branches of forestry, but also embrace theoretical studies in the fundamental principles of Forest Economy.

As mentioned in the beginning the State owes more than a third of our forests. These state forests are managed by the Government Forest Service and not leased to private companies. The end aimed at by the Government's forest policy is to render the economy of the State Forests as permanent as possible. The two factors, personal, technical knowledge and permanent economy have made the Swedish State forests valuable and well preserved resources. The Forest Service consists of 10 Chief Foresters each one in charge of a "district," 90 foresters managing the same number of "revirs" and 417 rangers who are superintendents of so-called "guarding sections."

As regards forestry of the private companies my friend Ehn\* is going to give a description of some of its most important points, and so I had better be as brief as possible. The main principle nowadays may be said to be an attempt to arrange the cutting in such a way that in times of good prices in the market the forests are slightly over-cut, in times of low prices the contrary, and the average of timber taken out from the forests corresponding to the regrowth. This policy necessitates very good estimates of the annual growth, of usually very vast districts, which is certainly a dif-

\*Mr. Ehn's paper will be published in an early issue of the Pulp and Paper Magazine.

ficult task. A lot has been done in that respect lately. I may mention for example that the chief forester of **Kramfors Co.** is just inventing a special system for keeping record of the growth compared with the production. It is a kind of forest book-keeping by which an account is kept, supposed to be accurate within a very few per cent. On the debit side is the estimated growth which is calculated from careful measurements and on the credit side the actual amount of wood taken out. As you may say that such a method is only applicable on small areas, I may tell you that the forests of **Kramfors** are spread over a tremendous area and consist of about 190 million acres, supplying lumber for two large pulp mills and 4 saw mills.

Re-growth by means of "*Forest Plantation*" occur most generally in the southern and central parts of the country. During the last decade the Government has done a great deal to promote forest plantation which method, in consequence, has gained the confidence of the forest proprietors to a greater degree than formerly. This method, too, makes it possible to determine the future composition of the forest as regards the proportion in which the various kinds of trees are to be represented there. Forest plantations are raised either from seed or from seedlings. It has been found that if the soil is more suitable for one kind of tree, whereas you want two sorts to grow simultaneously (which often at home gives the best result) the best plan is to give the less favored tree a start of some years growth. This is often done so that the tree which shall be given the start is planted whereas the other is reproduced by means of seed.

In northern Sweden where distances and areas are very large, the companies have tried to carry out their cutting methods in such a way that the natural re-growth of the forest is facilitated. It would take me too long to describe this now, but if anybody is interested in these methods I should be very pleased to tell him all I know about them in private.

Most of the companies have their forests divided into districts managed by graduates from the College of Forestry. These districts are divided into guarding sections supervised by rangers trained in the above mentioned schools. These rangers live on their sections in comfortable houses built by the Company, and constantly surveys his forests. He carries out all orders from his chief forester and has the responsibility for the practical handling of everything respecting his section, marking the trees, organisation of the cutting and transport, nurseries, etc.

Before I finish I should like to say a few words on the connections between Canadian and Swedish lumbering men. The two nations are the most important lumber producers in the world's market. But natural conditions have given them altogether different markets. Sweden and Canada are not competitors, and have no need to compete with each other. But we have need of each other as good friends. Forestry is a difficult economic science, and I feel sure that it would be a very great benefit for both nations, and through them for the whole world, if Canadian and Swedish foresters would come together to co-operate and discuss their science in friendship and good fellowship. Our feeling for Canada is warm and sympathetic, and I wish, gentlemen that many of you would come and visit our country. You will be sure to be received as good friends.

## About Our Advertisers

### Bouffard—Bergevin.

Bouffard-Bergevin is a new firm organized to handle pulp and paper mill supplies exclusively. Their line includes, paper machine clothing, pulp stones, chemicals, etc., in which they represent some of the well known firms in the United States and Europe.



H. A. BOUFFARD.

Although they do not sell oils they have a technical service department pertaining to efficient lubrication acting independent from any oil companies, but handle proper lubricating oil apparatus for different conditions.



A. T. BERGEVIN.

Mr. H. A. Bouffard is a former mill man having been connected with paper mills in the United States and Canada before going overseas. Recently he has been in the technical service department of the Brompton Pulp & Paper Co., Ltd. Mr. A. J. Bergevin is a former banker and is also a returned man.

Canadian Fairbanks Morse are distributors of that interesting and remarkable tool, the "*Radrobe*" drilling attachment that bores square holes.

All plants of the Whalen Pulp and Paper Mills Ltd., are in full operation except the lumber mills. President McGarry is expected in Vancouver about the middle of December.

### THE WONDER TOWN OF THE NORTH LAND.

The Porcupine Advance has the following to say of Iroquois Falls:—

From time to time complaints are heard regarding Iroquois Falls being kept as a "Company owned town." At first thought it seems rather odd that the chief complaints come from outsiders, rather than from those who live at Iroquois Falls and thus might be expected to suffer from any evils necessary in 'Company-owned' towns. A visit to Iroquois Falls is likely to suggest that "there's a reason," and a comparison of Iroquois Falls with other free and untrammelled towns of the Province seems to be all in favor of Iroquois Falls. There may be disadvantage to a "Company-owned" town, but in the case of Iroquois Falls as the matter works out in practice, the benefits far outweigh any drawbacks. If the people of Iroquois Falls do not feel that they are happily situated in their beautiful town with its wide and well-kept streets, its miles of sidewalks, its 250, or more, comfortable homes, (every one with furnace, water, light, bath-room, sewerage, etc.) its wonderful lawns, its public parks, its public and private profusion of flower gardens and beauty spots,—then the people of Iroquois Falls are difficult indeed to please. Under no known system of promiscuous private ownership could such a town as Iroquois Falls be built up in so short a time. Only a few years ago Iroquois Falls was not ineptly described as a "muddy clearance in the bush." To-day it is one of the Beauty Towns of the North, one of the most pleasing residential places in the Province. If you think "company" towns are wrong in theory, just visit Iroquois Falls to-day and you will be tempted to believe that theory and practice do not always make a perfectly matched team.

Unrestricted townsites in the North Land are well-known for their fire-traps, unsanitary conditions, overcrowding and all other municipal evils. Iroquois Falls has none of these undesirable features. The visitor receives his first impression of the town when he steps off the train at the depot. Just before him the large "Civic Centre,"—a park of wonderful lawns and magnificent flower beds. The rest of the town supports this pleasing first impression. Each house has its own lawn, well-kept, and beautiful with flowers. There does not seem to be a neglected home in the town. Evidently the citizens take the same pride in keeping the town a beauty spot as the Abitibi Company took in making such a town possible. And by the way, Iroquois Falls is not a "company" town in the ordinary way. It has its own municipal government, and the most democratic committees and councillors. Indeed, outsiders might suspect that the only interference by the Abitibi Company takes the form of putting up the money after the people decide they want some new improvement.

Among its public features Iroquois Falls now boasts beautiful parks, fine roads, miles of sidewalks, one of the largest hotels in the North Country, one of the biggest and most modernly equipped public school buildings, good tennis courts, a large athletic ground, and a magnificent golf course in process of construction. The new public school is a modern structure of the most approved type, finished in stucco, with the interior finished throughout in hardwood. High ceilings, shaded electric lights, and practically perfect lighting, heating and ventilation systems make it the most desirable type of school building. It will accommodate 100 pupils. The new hotel is also modern and perfectly

equipped in every respect. It would indeed appear to be too large and ambitious for a town no bigger than Iroquois Falls. But it is already taxed to capacity. Instead of being too large, further extensions may shortly be required. The hotel now has over 200 rooms, and about 25,000 meals are served in it every month.

These is much construction work now in progress at Iroquois Falls, and even greater things are planned for the town. There are extensions now under way to the pulp and paper mill, certainly now the most perfectly equipped, if not the largest, of its kind on the continent. One paper-making machine recently imported from England and now waiting the completion of the addition to house it, is the largest machine for paper making in the world.

A number of new houses are in course of construction for Abitibi Company employees, and practically all of the older houses are being stucco-coated to assure their warmth and comfort in the winter. There is an unusual individuality about the homes. No two of them are alike in appearance or design, though all are alike in being well-finished inside and out, every one with fine cellar, furnace, electric light, water, bath-room, sewerage, etc. There is only one house to every two lots and this means good lawns and gardens for every home. Some of the flower and vegetable gardens are "worth writing home about." A fine big new rink is also to be rushed to completion for this winter's hockey and skating, with additional provision for curling.

The people of Iroquois Falls take a great pride in their town and they have every reason for doing so. It is one of the Wonder Towns of the Great North.

### LIFE INSURANCE FOR BELGO EMPLOYEES.

The Belgo Canadian Pulp and Paper shows its appreciation for the good, loyal and faithful services of its employees, and offers them free insurance with Metropolitan Life Insurance Co., as an acknowledgment of its responsibilities towards their dependents.

The amount of life insurance varies from \$500. to \$3,000., according to the following table:—

For men having been with the company on Nov. 17th for:—

6 months, less than 1 year continuous service	\$500.
1 year, less than 2 years continuous service	\$750.
2 years, less than 3 years continuous service	\$1,000.
3 years, less than 4 years continuous service	\$1,250.
4 years, less than 5 years continuous service	\$1,500.
5 years, less than 6 years continuous service	\$1,750.
6 years, less than 7 years continuous service	\$2,000.
7 years, less than 8 years continuous service	\$2,250.
8 years, less than 9 years continuous service	\$2,500.
9 years, less than 10 years continuous service	\$2,750.
10 years and over	\$3,000.

The insurance benefits do not in any way interfere with the Quebec Accident Compensation Act, and are over and in excess of any sums that are due to the dependents under the provisions of this Act.

Should an employee leave the company, he has the privilege to continue the insurance at his own cost without any medical examination, but subject to rates and conditions of the Metropolitan Life Insurance Co.

A feature of the agreement reached between the Belgo and the Insurance Company is the free nursing service which will be supplied. In many an instance serious diseases have been avoided or checked through the immediate intervention of a nurse or a doctor.

**Canadians will be Interested in the Following Story from London which appeared in the New York Evening Mail of November 4th.**

Englishman's View of Newsprint Market.

Newspaper publishers in the United States may make up their minds that the end has come to their virtual monopoly of Canada's news print output.

Last year the United States bought over 80 per cent. of the news print Canada produced, while 15 per cent. was consumed in the Dominion by its own newspapers. Part of the remainder came to England. By the end of next year there will be a very different tale to tell, unless world conditions change very greatly.

**From Northern Countries.**

Before the war England got most of her news print from Finland, Norway and Sweden, and a little from Germany. These countries were largely dependent on England for coal, and it takes a ton of coal to produce a ton of news print. Today the cost of English coal is so high and the general disorganization of industry in the northern countries so great that England cannot get the news print she needs from her old suppliers and the cost has gone beyond a point where any but a few newspapers in London can be regarded as really paying propositions.

Most London publishers today pay about 13 or 14 cents a pound for news print. This does not apply to the Northcliffe papers nor to the Daily Telegraph, owned by Lord Burnham, which have their own paper mills. Consequently the Northcliffe papers and the Telegraph are the only ones which can print a paper above a moderate size.

As a result the others are forced to cut their advertising to a minimum. Even the Northcliffe papers are economizing too because of possible eventualities. I was told authoritatively that the Times recently abandoned the project of producing a special number for which \$750,000 worth of advertising had been pledged.

Very naturally in the circumstances London publishers envy the New York publisher who can buy paper at 6 3/4 cents a pound. And they say to themselves: "Why should not we get this comparatively cheaper paper instead of letting the Yankees have it? After all, Canada is our own, and blood is thicker than water. Why won't she sell to us?"

**Attempt at Merger.**

This point of view was put to me today by a man in close touch with one of the great newspaper organizations here.

"It may be," he said, "there is so much American capital invested in the Canadian paper mills that we cannot induce the present manufacturers to sell to us rather than to the Americans. But we mean to try and we are trying. We could pay a good deal more for news print than Americans are paying and still not reach our present high costs.

It is well known that during the recent Imperial Press Conference at Ottawa an attempt was made to form a merger of five great Canadian paper making concerns to be controlled by British capital.

I was told by a day well informed newspaper man that it is extremely unlikely that Lord Burnham would join the undertaking, in the first place, because he has his own paper mill, and in the second because he and Beaverbrook are not on very good terms.

But whether Burnham joins the merger or not, there is little doubt an attempt will be made to put it through. If it does not go through as now contemplated, there will probably be formed, it was said, a large corpora-

tion to take over as much as possible of the accessible soft wood lands of Canada so as to shut out the American mills.

The British point of view, in short, is that British newspapers must be protected as long as they are willing to pay a fair price for the Canadian product, and that America deserves very little consideration because not only has she allowed her own forests to be destroyed, but she is now producing ridiculously large newspapers which waste hundreds of thousands of tons of news print.

**Small Editions.**

It is worth noting here in that connection that the Times, although well off for news print, since it is a Northcliffe paper, has printed mostly sixteen or eighteen pages a day since September 1. Rarely has it gone to twenty. And it has charged six cents a copy for its issues.

The Telegraph averages about the same and charges four cents. So does the Morning Post, a still smaller paper.

The Daily Mail still remains at two cents, but it publishes only ten or twelve pages a day and seven columns to the page. But it has a circulation of 1,200,000, which would seem to show that the public does not run after heavy papers.

**BROMPTON BUYS MORE WOODLANDS.**

The Brompton Pulp and Paper Company, Limited, has acquired extensive pulpwood limits in the Lake St. John district, whereby 634 square miles, or 405,760 acres, will be added to the already considerable holdings of the enterprise.

The latest acquisition, it was stated, is a very valuable one and will give the company an important increase in available timber. The securing of the new limits will provide just what has been lacking in the past to place the company in a foremost place in the pulp and paper industry of the Dominion.

Prior to the recent acquisition, Brompton owned or controlled by lease, timber limits of 311,786 acres in the St. Francis River district, so that its holdings have been more than doubled with the addition of the 405,760 acres, and now total 717,528 acres. It was estimated several months ago that with outside purchases, the wood reserves of the company were considered sufficient to ensure a supply for forty years' operation at its present capacity, a period which, it would seem has been extended indefinitely by the Lake St. John addition.

It has been known for some time past that the president of the company, F. N. McCrea, M.P., who is considered one of the best timberland experts in Eastern Canada, has been giving his personal attention to the matter of increasing Brompton's pulpwood holdings and it is presumed that the closing of the recent negotiations was effected only after a personal inspection of the area involved.

Preparations are well under way for the installation of the machines for the new groundwood pulp mill of the Brompton Pulp & Paper Company at East Angus, and it is expected that operations will commence by the first of February.

Regular shipments are being made from the Ocean Falls Plant of the Pacific Mills, Ltd. The steamers of the Pacific Steamship Co., are making regular calls at Ocean Falls and taking a good share of the output of this mill South.

### COMMITTEES OF T. A. P. P. I. AT WORK.

Nearly all of the standing committees of the Technical Association of the Pulp and Paper Industry are now fully organized and ready for active work.

#### Developments in Dyestuffs.

The Dyestuffs Committee, under the direction of Dr. Otto Kress, of the Forest Products Laboratory, Madison, Wis., will have a report of unusual interest to make at the annual meeting following developments in the manufacture of dyestuffs for the paper and textile trades since the World War. The committee as finally constituted now consists of the following specialists in tinted papers and dyes: Dr. Otto Kress, chairman, Forest Products Laboratory, Madison, Wis.; Ross Campbell, American Writing Paper Company, Holyoke, Mass.; Charles G. Bright, Kimberly-Clark Company, Neenah, Wis.; Clarke Marion, Champion Coated Paper Company, Hamilton, Ohio; Kenneth T. King, E. I. du Pont de Nemours & Company, 1114 Tribune Building, Chicago, Ill.; C. C. Heritage, National Aniline & Chemical Company, Buffalo, N. Y.; Carl C. Schneider, Knowlton Brothers, Inc., Watertown, N. Y.

#### An Investigation of Coating Substances.

A new committee which was formed at the last annual meeting, is the Committee on Coated and Processed Papers, of which Clarke Marion, of the Champion Coated Paper Company, Hamilton, Ohio, is chairman. The committee is preparing specifications of actual tests on the influence of stock on the coating, the coating of paper being influenced to a greater or less extent by the character of the stock used. The body of the stock must be varied in accordance with the results that are looked for. Thus, a dull finished coating requires a different grade of stock from a highly finished sheet. The several ingredients entering into the stock also exert an influence on the finished product. The committee therefore decided to establish a set of specifications or standards for the different ingredients that compose the actual coatings.

#### Specifications for Casein.

The coating of paper involves the general use of such materials as casein, starch, clay, blanc fixe, satin white, dyes, etc. The committee intends to concentrate its early work on the testing of casein and will endeavor to establish several simple tests and requirements to which a standard casein should conform. Among other aspects of the testing of casein, which the committee will consider are its clay carrying capacity, and the process of manufacture, whether lactic, sulphuric, muriatic or natural soured, the percentage of fat, moisture and foreign substances. The Committee on Coated and Processed Papers is composed of the following members of the Technical Association of the Pulp and Paper Industry: Clarke Marion chairman, Champion Coated Paper Company, Hamilton, Ohio; Norman Clark, Nashua Gunned and Coated Paper Company, Nashua, N.H.; Harold H. Holden, Falulah Paper Company, Fitchburg, Mass.; Edwin Sutermeister, S. D. Warren Company, Cumberland Mills, Me.; Kenneth T. King, E. I. du Pont de Nemours & Company, Inc., 1114 Tribune Building, Chicago, Ill.

The supply of Technical Association Papers Series ii is now exhausted. A new volume is in preparation consisting of the papers and discussions at the Fall meeting of the association held at Saratoga Springs, N.Y., last September.

The following reprints of papers and reports are on sale at the office of the association, 542 Fifth Avenue, New York, at the prices quoted:

**Paper Testing Methods.** A practical treatise by Fred. C. Clark on the analysis of paper and paper-making fibres as well as the loading materials in ordinary use. Formulas for stains and chemical reagents are given and there is a chapter on the fibres used or proposed for use in papermaking. (\$1.00).

**The Creative Workman.** This is an account, by Robert B. Wolf of pulp and paper mill operations, showing how production was increased and an improved esprit de corps cultivated by the keeping of records of production and efficiency. It is a pamphlet that should be accessible to every mill executive and foreman, to say nothing of the workers themselves. (25 cents).

**Hand Made Paper and Its Water Marks.** By Dard Hunter. This is a bibliographical list of works dealing with the manufacture of hand made paper and the water marks in hand made papers. Descriptions of the books are given and these are of special value for library purposes. (25 cents).

**Forest Products Statistics.** An invaluable finding list for the records of government publications, which are sources of statistics on forest products. It includes both original and secondary sources and the names of the various offices in Washington from which tabulations may be obtained. (25 cents).

**Government Paper Bibliography.** A reference list of government documents on pulp and paper which are published by the Government Printing Office, Washington, D. C. (10 cents).

### HEAD OF LINCOLN PAPER MILLS DEAD.

Word reached the offices of the Lincoln Paper Mills, Limited, in Toronto, Monday morning of the death at his home in St. Catharines, Ont., of the president of the company, Mr. W. D. Woodruff. The late Mr. Woodruff was stricken with apoplexy last Thursday and it was known from the first that he could not recover. Death ensued as a direct result of the stroke.

Welland D. Woodruff's death will be a distinct loss to the Canadian paper industry with which he has been identified for many years. He was born at St. Catharines in 1861 and entered the employ of the Lincoln Paper Mills Co., Limited, in December, 1881, with which industry he has been connected ever since, having reached the position of president and managing director. His other business activities included the vice presidency of the Coniagas Reduction Company, Thorold, and a directorship in the Coniagas Mining Company. He took a prominent part in the public life of his native city, St. Catharines, where he had served on the city council and in 1918 he unsuccessfully contested Lincoln county for the Commons. Although a very busy man he took time to indulge a taste for out-door sports of which he was very fond.

### W. M. HARRISON OF PACIFIC PULPS LTD., RETURNS FROM TRIP EAST.

Mr. W. M. Harrison, formerly Sales Manager of the Whalen Pulp & Paper Mills Ltd., and now General Manager of Pacific Pulp Ltd., has just returned from a trip to the East. During his trip Mr. Harrison covered all the market centres for pulp and paper and secured first hand impressions of conditions that prevail.



### ACTIVITY IN NEW YORK AND TEXAS.

A syndicate composed of leading paper manufacturers in Northern New York has purchased a controlling interest in the Northern New York Utilities, Inc., one of the Empire State's largest power concerns. The transaction involves the control of Utilities powers in Watertown, at Black River, Belfort, Taylorville, Elmer Falls and Effley Falls in Lewis county and South Edward's and Brown's Falls in St. Lawrence county. All these powers are fully developed except that at Brown's Falls, and aggregate approximately 30,000 horsepower. The deal was closed December 6 when Floyd L. Carlisle, president of the St. Regis Paper Company, representing the syndicate, and John B. Taylor, president of the utilities corporation, signed the contract calling for a transfer to the syndicate of approximately 75 per cent of the utility company's stock. The amount of the consideration involved was not announced, but it is believed that the stock was not purchased at anywhere near par value. The concerns party to the purchase own enormous powers on the Black River and on other Northern New York streams. Under existing conditions of competition it was impossible to harness them into their most effective service. A conciliation of these powers with the developed and undeveloped powers of the Northern New York Utilities, Inc., makes it the largest hydro-electric power combination in the eastern section of the United States, according to a statement made by Mr. Taylor and Mr. Carlisle. It makes possible a combined ultimate development of between 150,000 and 200,000 horsepower.

Dallas, Texas, has been chosen as the location for a new plant for the manufacture of writing, blotting, tissue, book and newsprint paper by the Trinity Paper Mills. It is said that this mill, when completed, will be the first of its kind to be operated west of the Mississippi River. The wheels of the new plant, if present plans carry, will be in motion early next spring. The Dallas mill, according to the announced plan, will have a capacity of twenty tons daily, and will use cotton linters in the manufacture of paper. Two other such mills are now in operation in the South, one at Augusta, Ga., and the other at Memphis, Tenn. The Trinity Paper Mills also has a plant under construction at Commerce, Tex. Another Texas venture calls for the construction of four new paper mills in the yellow pine district of the Lone Star State. Dallas is to be used as a distribution center for the product of these mills, which will form part of the present paper-making industry of the Bogalusa Paper Company of Louisiana, manufacturers of paper used in making cartons and boxes. W. S. Ayers of Chicago, who has just completed an investigation of the possibilities of paper making from the yellow pine pulp, states that every variety of paper used commercially, except newsprint, can be profitably manufactured from the quick-growing yellow pine. The new plants, to cost \$8,000,000, will utilize these possibilities, making both kraft paper such as is used for wrapping or manufacturing containers and book paper.

If some of you old hard-shells would lend a hand by advocating safety and showing the younger generation the results of carelessness by your past experience, you would be a great help to the cause of humanity. There are a few of you who can show the results of carelessness by those missing parts of your anatomy.

### IMPORTANT CHANGE IN WHALEN POLICY.

Almost immediately on becoming president of the Whalen Pulp and Paper Mills, Hon. T. W. McGarry, K.C., with other directors of the company made a thorough investigation of conditions in British Columbia. The result was announced last week in the appointment of the Reliance Mill and Trading Co., of New York, as the managers of manufacturing and sole sales agents for the product of the three mills of the Whalen Company. Mr. Garrigan, who has a reputation as a sulphite maker is also enlisted on the operating staff.

The Reliance Mill and Trading Co., means John Ball its president and U. M. Waite, general manager. Both of these men have had years of practical experience and have demonstrated their ability to perform important tasks.

### PAPER MILL AT PRINCE GEORGE, B.C.

A report from Prince George, B.C., states that plans are practically completed for a pulp and paper mill at that point to cost over \$6,000,000, by a number of eastern capitalists, who have been looking over the ground, including Angus McLean, of the Bathurst, N.B., Lumber Company; Frank Jones, president of the Canada Cement Company, and M. E. Preish, president of the Haynes Lumber Company, Buffalo, N.Y.

### WESTERN CANADA PULP AND PAPER CO.

Owing to present conditions in the kraft pulp and paper market the Western Canada Pulp & Paper Co., Ltd., have closed down their plant for 30 days. During the suspension of operations construction is going on which is necessary for the doubling of the capacity of the plant. Up to the time of closing down only two out of four machines were in operation. When the plant is fully completed the capacity will be 40 tons per day. Besides the pulp which has been turned out some kraft paper has already been manufactured and deliveries made.

The present officials of the Company are: Pres. Everly M. Davis; Vice President, H. J. Daly, Pres. of the Home Bank; General Manager, G. A. Austin; Consulting Engineer, Henning Helin; Chief Engineer and Master Mechanic, W. R. Gray; Pulp Supt., T. Iverson.

Potential orders are now in sight to start on when the plant resumes operations.

### PRINTING COSTS HIGHER IN ENGLAND.

Owing to the advance in printers' wages throughout the country, which took place last month, the Cost and Charges Committee of the Federation of Master Printers have examined the costing figures of a large number of printing firms. They find that the cost of general printing apart from materials, has increased by at least 5 per cent., and in the case of periodical, newspaper and similar work 6½ per cent.

The arbitrator in the recent dispute awarded an increase of 18 per cent. on the pre-war wages in addition to whatever had been granted up to the end of June, to be apportioned among the various classes of workmen. Compositors who are members of the Printing Trades Alliance are entitled to an increase of 7s per week on their wages of £4 15s prior to the arbitration.

We often wonder what kind of a job the devil will have for the careless worker. We also wonder if he has any safety men. Surely not!

### REDUCE PRICE OF NEWSPRINT.

As a result of the Conference in New York, on Monday, with consumers of their paper, it is reported that the sales representatives of the Spanish River and Abitibi paper companies had modified the price of 7 cents per pound for newsprint paper, recently announced, to 6½ cents or from \$140 to \$130 per ton.

The concession, while a moderate one, especially in view of the fact that the American paper users are to pay only 6 cents per pound, while other mills are getting 6½, for paper during the month of December, instead of the current 5 cent one, was well received in paper trade circles, where it was regarded that the 6½ cent rate was sufficiently remunerative.

The action, also, will bring the newsprint price to uniformity, other Canadian producers, as well as the International Paper Corporation of the United States, already having set the \$130 rate for the first quarter of 1921.

### PULP MILL FOR ARNPRIOR.

It is reported that McLaehlin Bros. Ltd., of Arnprior, Ont., plan to build a solid concrete dam across the Madawaska River, 150 feet north of the present mill bridge, and develop at once 2,000 horsepower electric energy, carrying it to the point at the mouth of the river, where a pulp-grinding mill will be built of an initial capacity of 30 tons a day.

### INTERNATIONAL IMPROVES NIAGARA MILL.

The International Paper Company is adding to its big plant at Niagara Falls, N.Y., a filtration plant with a capacity of 10,000,000 gallons of water per day. The purpose of installing the filtration plant and pumps is to enable the company to manufacture high grade bond and book paper, a new departure at the company's Falls plant. The estimated cost of installing the filters and pumps is \$200,000.

### NEW PLANT AT NIAGARA FALLS.

The building for the Paper Converting Corporation, which is located on an eleven acre plot of land near Royal avenue, Niagara Falls, is nearing completion. It consists of a paper mill building 215 x 84 feet and a converting building 100 x 150 feet. Both buildings are two story mushroom type concrete construction. The plant is being white enameled throughout and no expense is being spared in making it a model mill for cleanliness, economy in operation and to have ideal working conditions for employees.

There will be two 132 inch Yankee M. G. machines on an improved type, which are now being installed. The machine room is laid out with the paper machine and beaters on the second, and the drive and chests on the first floor. There is no basement so that everything is kept entirely above ground.

### BEAVER COVER PLANT SHUTS DOWN TEMPO- RARILY, PLAN TO OPEN AGAIN IN SPRING.

The Beaver Cover Lumber & Pulp Co., Ltd. have closed down their pulp plant and shingle mill owing to the unstable market conditions. The plant will not be reopened until the market picks up again in the Spring. At the present time things are moving along under conditions satisfactory to all concerned and future plans look bright for opening up in the Spring with an expansion of the business as soon as conditions are right.

### HENNING HELIN CONSULTING PULP EXPERT.

Mr. Henning Helin is now located in the Canada Life Bldg., Vancouver, B.C. He is acting in an advisory capacity to the Western Canada Pulp & Paper Co. Ltd. Just now Mr. Helin is finishing up some investigations for several proposed pulp manufacturing projects. One or two of these are rapidly maturing into concrete propositions.

Graduating from a Technical College in Sweden, Mr. Helin served his time for 10 years at the practical side of the manufacturing of pulp and paper in Sweden, afterwards coming to Canada in 1912. For six years he was technical manager for the Wayagamaek Pulp & Paper Co., Ltd. Coming to British Columbia in 1918, Mr. Helin has since been actively engaged in the development and re-construction of pulp plants in this province.

Mr. Helin is familiar with all sections of the pulp timber areas of British Columbia and his services are being sought by those interested in proposed operations.

### WILLIAM POWER DEAD.

The death occurred in Quebec, last Saturday, after a short illness, of William Power, head of the firm of W. and J. Sharples, timber merchants. He was also president of the Riviere Ouelle Pulp and Lumber Company, president of the Lafontaine Lumber Company, former president of the Canadian Forestry Association, former president and director of the Lumbermen's Association of Canada, and a former president of the Quebec Limit Holders' Association.

He is survived by his widow, formerly Miss Winifred Rockett, four sons, W. Gerard Power, of St. Paeome; Joseph Power, Charles G. Power, M.P., and Frank Power, of Quebec; two daughters, Mrs. Noel Barclay, of Montreal, and Mrs. F. A. Mosely, of Montreal, as well as two sisters, the Misses Alice and Annie Power, of Bridgewater Cove, Sillery.

### NEW PAPER PLANT AT OGDENSBURG.

The Frontier Paper Company, with principal office at Ogdensburg, has received a state of New York charter with a capital of \$300,000. The company proposes to take over a part of the Klondike lumber plant on Riverside drive west of Ogdensburg and will operate a ground pulp and paper mill. The directors include: Former Governor John A. Dix, Harry C. Bray, Islay V. H. Gill and Thompson Douglas, all of Albany, N.Y.

### KAPUSKASING NOW HAS ELECTRICITY.

One feature of this community's pioneer days has passed into history. Kapuskasing citizens are now dispensing with candle and coal oil lamps as illuminants and are lighting their houses with electricity. The power plant is now in operation and while it is only temporary, a permanent installation is planned. The power line runs to the Dominion Experimental Farm.

Plans for the mill of the Three Rivers Pulp and Paper Co., are going forward nicely under the direction of M. J. J. O'Sullivan. Material will be placed this winter for an early start in the spring. Six magazine grinders have been ordered from the Watrous Engine Works Co. They will be placed in pairs on three shafts, with a motor connected at the end of each shaft. Each stone will have a capacity of 18-20 tons per day.



# PULP AND PAPER NEWS

An unusual legal dispute has arisen at London, Ont., through the issuance of a writ against the Somerville Paper Box Co., Limited, of London, by the American Chielet Co., of New York for the sum of \$50,000. It seems that in 1910 the business and plant of the Somerville Paper Box Co. was bought from the Sen Sen Chielet Co., which latter firm was later absorbed by the American Chielet Co. The sales arrangements involved a transaction whereby the Somerville Company assured a mortgage for \$50,000 payable in legal money of Canada, or in gold if demanded by the mortgage. The present exchange conditions have prompted the American Chielet Co., which holds the mortgage, to demand payment in gold. The American company has agreed to accept the amount of the mortgage payable in American funds, which would mean that the London company would have to pay practically \$57,000 in Canadian money at the present rate of exchange.

Twenty-five members of the Lithographers Union, employed by the Mortimer Company, Limited, Ottawa, are on strike, claiming that they should receive a twenty per cent increase, similar to that which has been granted recently to lithographers in other Ontario cities.

The Toronto Telegram has been served with notice of complaint under the Libel and Slander Act by counsel acting for E. W. Baekus. The notice of action is the outcome of certain articles published in the Telegram in connection with the acquisition by Mr. Baekus of certain timber and pulp limits in Northern Ontario.

Mr. G. O. Comfort of the Specialty Paper Manufacturing Co. Ltd., Montreal, was in Toronto calling on the trade during the week.

Nothing has been heard lately as to the Ontario Government's supposed intention to establish a pulp and paper mill at Nipigon. It is stated that so far as a pulp and paper mill is concerned, the Government has not even gone so far as to enquire as to what the cost would be.

The first skirmish in the action brought by the Attorney-General of Ontario against Walter H. Russell of Port Arthur and the Russell Timber Co. for damages for the alleged wrongful removal of pulpwood from Crown lands, which lands, it is stated, were obtained by subterfuge, took place at Osgoode Hall, Toronto, when the Attorney-General moved to strike out the counter-claim of the defendants whereby they ask for a fiat to bring suit for \$100,000 for injury to their business and credit by the alleged ulterior use to which the Attorney-General has put his suit. Decision respecting the motion was reserved. In the statement of claim the Attorney-General alleges that the defendant has cut upwards of 60,000 cords of pulpwood, 1,800 logs and 800 booms on lands, patents of which were improperly obtained on the representation that there had been valuable finds of mineral thereon. Others were said to have been obtained under the guise of homesteading. The defendants deny wrong-

doing and say they have bought wood from the Cambrian Mining Co., Taylor & Mackie, settlers and others. If these parties got their lands improperly the defendants say that should be prosecuted instead of themselves. The defendants admit having obtained 3,700 cords on Crown lands by mistake and offer to pay for this.

Mr. George Erskine, who opened the Toronto office of the George H. Mead Company last February, and has been in charge as manager since that time, has resigned his position with the company. It is stated that he will go to the Canadian west in the capacity of a mill superintendent. Mr. Erskine is an energetic and expert paper man and has done good service with the Mead interests. His position here has been taken by Mr. L. E. L. Harvey, who has been Mr. Erskine's assistant since the Toronto office was opened, coming here from the Laurentide Company. He is a young man who has already established a good connection in the pulp and paper field and should make good in his position of added responsibility.

T. S. Woodlings & Company, Limited, has been granted an Ontario charter to deal in lumber, pulpwood, etc., with a capital of \$200,000, and with head office at the town of Englehart. The provisional directors are T. S. Woodlings, H. J. McLaughlin, W. B. McLaughlin, L. F. Breeman and A. H. McLaughlin.

The Laurentide Company has a contract with the New York Times for five years for the output of the two new machines that will soon be in operation.

The West Virginia Pulp and Paper Company, of New York, a Delaware corporation, has increased its capital from \$20,000,000 to \$80,000,000, according to a notice filed with the Secretary of State of Delaware at Dover.

G. H. Schlichten is having plans prepared for the erection of a new factory for the manufacture of paper products in Davis, Yolo Co., Cal.

The Strathmore Paper Co., Russell, Mass., has construction work under way on its new two-story and basement, 38 x 78 feet, estimated to cost about \$25,000.

The Fort Wayne Corrugated Paper Co., Fort Wayne, Ind., has awarded a contract to the Indiana Engineering and Construction Co. for the erection of a new boiler plat addition.

## ST. REGIS INCORPORATES IN CANADA.

The St. Regis Paper Company of Canada, Ltd., has been incorporated with a capitalization of \$1,750,000. The head office of the company is in the Montreal Trust Building, Montreal. The president is Mr. F. L. Carlisle, and the board of directors and management are the same as the well known St. Regis Paper Company whose head office is in Watertown, New York. The company already operates a wood preparing plant at Osealanea, Que., and has large timber limits on the north shore of the St. Lawrence. It is the intention of the company to continue and extend developments on their Canadian interests and properties.



## Technical Section



### ANNUAL MEETING OF TECHNICAL SECTION.

At a well attended meeting of the Executive Committee of the Technical Section in Toronto, last week, it was decided to hold the annual meeting on Wednesday and Thursday, Jan. 19 and 20, 1921, at the Ritz Carlton Hotel, Montreal. The meeting of the Canadian Pulp and Paper Association immediately follows and it is expected that meetings of affiliated organizations will be held during the same week.

The finest program ever planned for has been laid out and there will be lively discussions on subjects of great importance to the industry. It is expected that Laurentide will be able by that time to speak from experience regarding the subject of high speed machines which aroused so much interest last January. The list of papers which will follow the business meeting and discussion of committee reports is as follows.

Electric drives for paper machines.

Miserecopy and its application to the pulp and paper mill.

The problem of ventilation in the machine rooms. Beating.

An analysis of steam plant auxiliaries.

Open discussion on "The protection of wood piles by spraying" and "Testing sulphate and sulphite pulp for strength."

### REVIEW OF RECENT LITERATURE.

**A-1 Acetyl content of wood and lignin.** C. G. SCHWALBE and E. BECKER. *Z. angew. Chem.* 33, 225-226 (1920). The statements by Pringsheim and Magnus that the greater quantity of the acetic acid obtained from wood products is derived from the lignin are controverted. Probably only one third of the acetic acid has its source in this substance.—C. J. W.

**A-4 H-O Measuring pulp bleaching qualities by methyl number.** A. CHAMBOVET. *Papeterie*, 42, 440-3, (May 25, 1920); *Paper*, 27, No. 8, 29, 32, (Oct. 27, 1920). Translation by A. Papineau-Couture. See *Pulp and Paper*, 18, 1001, A-4, H-O, Sept. 23, 1920. —A. P. C.

**A-14 Graphic analytical method for paper.** IGNAZIUS L. GARTLAND. *Paper*, 25, 515-9, (1919); *Papeterie*, 42, 715-6, (Aug. 25, 1920), 790-5, (Sept. 10, 1920). See *Pulp and Paper*, 18, 80, A-14, Jan. 22, 1920. —A. P. C.

**A-15 The life of cellulose.** *La Papeterie*, 42, 395-403, May, 10, 1920; *Paper*, 27, No. 8, 23-5, 32, (Oct. 27, 1920). Translation by A. Papineau-Couture. See *Pulp and Paper*, 18, 1005, A-15, (Sept. 23, 1920). —A. P. C.

**B-4. Profitable Utilization of Sawmill Waste.** Can. Libman & Woodworker, Jan. 1, 1920, p. 17. —C. L.

**B-6. How forest surveys are made.** Roland D. Craig. *Can. For. J.* Jan., 1920, p. 3. —C. L.

**B-9 Pulpwood supplies in the American North-West.** *Paper*, 27, No. 6, 11-28, (Oct. 13, 1920). A brief discussion on the advantages there would be in establishing a 100% newsprint mill in the Blackfoot and Flathead National Forests, Montana. —A. P. C.

**E-2 Manufacture of a material resembling dextrin from cellulose waste liquors.** M. CLAASS, German Patent 322,688, Feb. 15, 1918. Cellulose waste liquor is improved, both in adhesive properties and in color by treatment below 100° with acids, sulfates and a sulfoxalate.—C. J. W.

**E-2 Adhesive for joining articles made of cellulose derivatives to the same or other materials.** *Farbenfabr.* F. BAYER & CO. German Patent 322,648, April 21, 1917. Esters of ethers of phenols or naphthols are employed for the purpose, e. g. beta naphthol amyloether may be used as an adhesive for ethylcellulose.—C. J. W.

**E-4 Investigation of roasting gases with the Orsat apparatus.** R. DIECKMANN. *Wochbl. Papierfabr.* 51 no. 26, 1842-1844 (1920). Dieckmann compares the Reich and the Orsat apparatus for the analysis of SO<sub>2</sub> and SO<sub>3</sub>.—C. J. W.

**F-5; K-17 Book paper from Southern pines and gums.** SIDNEY D. WELLS, Engineer in Forest Products, Forest Products Lab., Madison, Wis. *Paper Trade J.*, 71, No. 22, 34-42, (Nov. 25, 1920). A detailed description of a series of cooking, bleaching and papermaking tests carried out at the Forest Products Lab., in co-operation with the DuPont Chemical Co., on loblolly pine and red gum from the James River Valley. The sulfate process is the most satisfactory for this kind of wood. By cooking with a large excess of chemicals, pulps can be obtained which can be bleached to a satisfactory color with a reasonable amount of bleach and which are suitable for book paper, the yield of bleached pulp being 33 per cent. By operating under carefully regulated conditions and high soda recovery the yield may be increased to 35 per cent., the costs being considerably lowered over those under the conditions described above; but a much more efficient organization is required. By further increasing the efficiency of the organization and regulating operating conditions still more closely, and using a bleaching operation involving 2 steps, a 40 per cent yield can be obtained with a considerable decrease in manufacturing costs. Relative manufacturing costs are given for 3 50-t. mills operating under conditions to obtain 33 per cent, 35 per cent, and 40 per cent yields respectively. Pulping trials for kraft stock on six of the more common southern pines seem to indicate they would prove as readily pulped for bleached stock as loblolly pine and the northern and western pines tested have been generally found to pulp even more readily. —A. P. C.

**K-2, K-21. Recovery of waste roofing felt.** L. F. HAWLEY & OTTO KRESS, Forest Products Laboratory, Madison, Wis., U.S.A. *Paper*, 27, No. 7, 18-9, 25, (Oct. 20, 1920). A description of experiments carried out at the Forest Products Lab., Madison, Wis., with a view to determining the feasibility of recovering both roofing stock and pitch on a commercial scale by extension with gasoline. The app. used consisted of a vertical cylindrical extractor 3 ft. high and 15 ft. in diameter, provided with a closed steam coil and a steam jet. The extractor was connected with a condenser in such a way that the vapors of the solvent, when boiled off, could be led to the condenser,

condensed, and returned again to the extractor, all in a closed system. The felt was extracted with 3 separate portions of solvent (a middle fraction of gasoline, b.p. 90-140°C), which was drained off after each extraction. The solvent remaining after the third extension and draining was recovered by blowing live steam through the extractor to a condenser and collecting the mixed condensate of water and solvent. Although considerable amounts of gasoline-soluble material and large amounts of chloroform-soluble material were left in the fiber, these were of such a nature that they did not interfere with the opening of the chips or with the running of the stock on the paper machine. Apparently, the pitchy, sticky portions of the asphalt are removed by the gasoline treatment and the material left behind is so hard and brittle that part of it washes off from the fiber during the beating and the part that remains is not detrimental to the quality of the pulp. In the analyses of the material left after extraction, the gasoline-soluble extract was slightly soft and sticky but the chloroform-soluble extract was hard and very brittle. The residue that is insoluble in gasoline acts like an ordinary loading material, offering no difficulty during the conversion of pulp into paper on the machine. In a commercial process of this kind neither the recovered pitch nor the stock would have the same composition as unused material; the stock would retain considerable proportions of the difficultly soluble constituents of the pitch, and the recovered pitch would be lacking in these constituents. If both were used again the final product would be very nearly the same as standard. The only difference would be caused by the insoluble constituent washed out on the paper machine and lost in the back water. The results of three series of extractions are given in detail and discussed, and the method of finding out the no. of cells required to carry out the process under given conditions is given. (See *J. Ind. & Eng. Chem.*, **12**, 493-6, (May 1920).—A. P. C.)

**K-6. Regeneration of waste paper.** Papierfab., 18, 759-62, Oct. 8, 1920; *Paper Trade J.*, **71**, No. 22, 60-2, (Nov. 25, 1920). Translation by CLARENCE J. WEST, Information Department, Arthur D. Little Inc. A brief description of various German patents covering processes for the de-inking and regeneration of waste paper. German patent No. 71,012, 1892, Louis Horst. The waste paper is moistened with petroleum, boiled with NaOH, and washed with soap solution.

German patent No. 76,017, 1893, Louis Horst. The paper is pulped and treated with a mixture of 10 pts. of water glass, 1 pt. of CS<sub>2</sub>, and 100 pts. of water. After thorough agitation the pulp is washed clean with water. 3 pts. of paraffin may be substituted for 1 pt. of CS<sub>2</sub>.

German patent No. 388,563, 1895, E. Montardier and G. Pieard. The pulp is moistened with cold water, treated for 45 min. with cold painter's lye, put through a disintegrating machine, heated in a bath containing 4 per cent NaCl, 0.5 per cent Na<sub>2</sub>CO<sub>3</sub> and 0.4 per cent garlic extract. When the mixture has been sufficiently heated 2.5-3 per cent potash is added, the mixture is allowed to stand 24 hours, screened, washed, and dried in a centrifuge. The garlic extract may be replaced by a corresponding quantity of allyl sulfide (C<sub>3</sub>H<sub>5</sub>)<sub>2</sub>S, or other cruciferous essence.

German patent No. 127,820, 1900, Betty Knoff. The waste paper is moistened, pulped and treated in a mixing or kneading machine with a neutral soap solution, or soap emulsion. The colored soap water is

drained away and the pulp washed clean with water. If the pulp contains groundwood or if the printing ink contains much rosin oil, a lower temperature must be maintained.

German patent No. 215,312, 1908, Henkel & Co., The finely divided paper (moistened with water) is treated with an alkaline solution of an alkali or alkaline earth peroxide in the presence of gelatinous silicic acid.

German patent No. 233,665, 1910, B. W. Petsche. The waste paper is pulped in a hollander and treated with a 1:1000 soda solution in a vessel fitted with a mechanical stirrer. The pulp is then washed clean with water.

German patent No. 263,220, 1920<sup>(1)</sup>, Adrien Louis de Sturler. The material is pulped and heated with solid petroleum or petroleum soap with gentle stirring. Water is added, the mixture allowed to settle, the supernatant layer of printing ink removed, and the pulp washed with slightly acidified water.

German patent No. 265,488, 1911, J. J. Werst, P.H. L. Collé, and J. M. Egmond. The pulped material is treated simultaneously with immiscible solvents each of which possesses a special affinity for one of the 2 materials. The operation when using water and benzine is described. German patent No. 279,101, 1913, covers a special app. for carrying out the process.

German patent No. 287,884, 1915, Rohm & Haas. A water suspension of the waste paper is treated with a pancreatic enzyme, or various similarly acting enzymes (papayotin, the castor oil enzyme, etc.), in alkaline, neutral, or slightly acid solution.

German patent No. 312,618, 1912, John M. Burby. Waste paper containing groundwood is pulped in a beater and treated at 40-65°C with a solution (not stronger than 0.2 per cent) of NaOH or its equivalent of another alkali or alkaline salt.—A. P. C.

(1) This is probably a printer's error for "1910."—(Abstractor.)

**K-6. Stationary digesters and the like used in paper-making and the like.** S. MILNE. English Patent 150,782. June 4, 1919. A vertical cylindrical digester has a conical lower portion within which are perforated plates for supporting the grass or like material under treatment. A valve at the lowest part of the digester has a hollow spindle connected at the upper end with a perforated pipe passing into the lower part of the digester. During digestion, the liquor drains through the perforated plates, passes out from the space between the plates and the outer walls, and is returned to the top of the apparatus by a steam injector or pump. When the process is complete the valve at the bottom is opened and the contents are washed by water, spent liquor, steam or air, and forced under pressure into the digester through the valve spindle and perforated pipe.—C. J. W.

**K-0. Durability, preservation and deterioration of paper.** ARIBERT & BOUVIER. French School of Papermaking, Grenoble, France. *Papeterie*, **42**, 338-52, (April 25, 1920), 386-92, (May 10, 1920); *Paper*, **27**, No. 4, 13-4, 44, (Sept. 29, 1920), No. 5, 18-9, (Oct. 6, 1920), No. 6, 20-1, (Oct. 13, 1920), No. 7, 23-5, (Oct. 20, 1920). Translation by A. Papineau-Couture. See *Pulp and Paper*, **18**, 195, K-0, Oct. 7, 1920.—A. P. C.

**L-7. The growth of the artificial silk industry in Belgium.** C. LEMAIRE, Civil Engineer, L'Age de Fer, **36**, 312-3, (May 10, 1920); *Paper*, **27**, No. 8, 20-1, (Oct. 27, 1920). Translation by A. Papineau-Couture.—A. P. C.

# UNITED STATES NOTES

Wrapping paper remains a problem with retail merchants in New York, who are considerably puzzled over its remaining high in price despite the lowered cost of all other supplies. Paper that used to cost four and five cents a pound advanced to four times those figures and holds its position firmly. Cardboard boxes, cartons and other paper products have been reduced, but these price changes seemingly have in no wise affected the strength of wrapping paper. Certain groups of retail merchants are contemplating an investigation with the object of unravelling the mystery.

Alumni of the Yale School of Forestry will have a reunion, December, 21 and 22 at New Haven, Conn. It will be the largest gathering of professional foresters ever held in the country. An incident will be an inspection of a tree plantation in Derby started by the first class graduated in forestry in 1901. Of 513 graduates 135 have arranged to attend.

Estimates made earlier in the year that American Writing Paper Company stock would earn around \$15 a share on the preferred in 1920 appear conservative in the light of actual earnings to date. The prediction is made in some quarters that the company should earn a net of \$2,500,000 after all taxes and interest, which would mean close to \$20 a share for the preferred, compared with \$3.48 a share earned in the 1919 fiscal period. The company's plants are being kept in full operation by the volume of incoming orders.

Continuing the big advertising campaign begun several weeks ago, the Robert Gair Company, Brooklyn, N.Y., manufacturers of folding boxes, cartons, labels, shipping cases, etc., outlines in a full page ad carried in metropolitan dailies the development and history of the folding package container, showing "how the individual package has grown from an experiment to an essential in modern business." Speaking of the expansion of the Robert Gair enterprise from a little loft in downtown Manhattan, the original establishment founded in 1864, the ad states that it's home plant in Brooklyn completely equipped to serve the greatest package merchandises of the country, is now the largest plant of its kind in the world. Here are manufactured not only the finished products, but also the inks, glues, and other accessory materials used in the process. Art, engraving, printing and lithographing departments are housed in the group of modern concrete buildings, as is also a perfectly equipped chemical laboratory and test department. The cardboard paper and other material used in the home factory are supplied from the Gair Company's own mills, among them the recently acquired plants at Haverhill, Mass., and New London, Conn.

A supply of from two to three hundred tons of news print paper stored in a warehouse adjoining the "Evening Mail" building in New York City was destroyed in a fire last Friday. Although the flames smouldering among the great rolls of paper were soon under control, the wetting down by the fire hoses made them unfit for use. This ruined stock of print paper represented all of the "Evening Mail's" reserve supply.

Tests made with spruce timber from Vancouver Island in the plant of the Great Western Paper Company at Ladysmith, Wis., seem to show that an unusual quantity of high grade pulp can be produced from a cord of this wood. Experiments with two earloads of the western wood received at the plant have been so satisfactory that it was predicted by men engaged in the work that the company will soon be receiving it in trainload lots. As the matter of transportation seems to offer no great difficulty, this new source of spruce may fill the needs of mills in the Great Lakes region which are depending on the all but depleted areas of Minnesota for their supply.

"McClure's Magazine," which has been selling for 25 cents, announces that its price will be reduced to fifteen cents beginning with the January issue. No reduction or change in the size or quality of the publication is contemplated. Publishers of other large magazines declare that they are not prepared at this time to follow the McClure people's policy of price reduction.

Charles Lathrop Paek, president of the American Forestry Association, sees in the legislative proposals drawn up by the Forest Industries Program Committee the achievement of the greatest forward step in forestry, because every interest concerned in a forest policy is agreed upon provisions for national legislation essentially practical and of a character that Congress is most likely to approve, adopt and make into law. This statement by Mr. Paek was made last week coincident with a call by R. S. Kellogg of the Newsprint Service Bureau for a meeting of the committee at Washington.

The forces of Daniel Hicks, Inc., of New York City, one of the pioneers in the paper stock business, recently celebrated the firm's twenty-fifth anniversary. Daniel Hicks, founder of this concern, established the business back in the days when newsprint was manufactured from rags.

Preliminary work on the construction of a huge power dam at Caldron Falls, Wis. and a pulp mill at Lakewood has been started for the recently organized Northern Peshigo Pulp Company. Roads are now being built to the power site to facilitate transportation of building material. The actual work of erecting the mill and construction the dam will begin next spring. About \$500,000 will be expended on the project. The dam, when completed is expected to have a waterfall developing an 80 foot head which would be sufficient to generate power for a 100 ton pulp mill. The company back of these projects was organized several months ago with T. A. Pamperin, P. T. Pamperin and L. B. Padway, all of Oconto Falls, and J. E. Griffen, Green Bay, as incorporators.

Daniel H. Schwartz has resigned as superintendent of the Chemical Paper Company's unit No. 5 at Holyoke, Mass., to take a position as general superintendent of the Ironside Board Corporation of Norwich, Conn. The Holyoke concern loses Mr. Schwartz after a twenty year term of service.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Dec., 11.—Most departments of the paper trade are going through a quiet period and while this is not reflected so much in the mills it is causing the jobber to do some speculating as to what the outcome is going to be for orders have fallen off in many lines to a degree that is bound to cause some concern. As yet, however, the jobber has not started to retrench to any great extent in his buying, although he is not passing on much of his stuff to the printer and consumer. As a consequence, stocks are becoming increasingly large in the warehouses. No tendency toward cancellations of orders on the mills is discernible, the jobbers taking the position that buying is bound to be renewed about the first of the year when their customers find themselves without stocks. In the meantime prices in all lines of paper remain firm and the trade generally is optimistic. Enough orders are coming through to ensure a satisfactory volume of business until buying is resumed and the mills are experiencing no difficulty in placing their output.

**PULP.**—Although it is reported in some quarters that there is not much pulp in the market, a paper manufacturer who buys his raw material in the open market, told the Pulp and Paper Magazine that he could get all the pulp he wanted quite readily, particularly if he was prepared to pay a higher price than he considered the market warranted. Ground wood appears to be scarce, but there is a considerable quantity of sulphite on the market. There has been a considerable drop in the sulphite market and some lots of unbleached are reported to have been bought as low as \$125 as compared with \$175 a few weeks ago. Bleached sulphite is quoted at \$175 f.o.b. mill, while there is a big demand for ground wood pulp at from \$130 to \$140. The output of the latter commodity has been greatly reduced by low water all over the country—most of the mills having been affected.

**BOOKPAPERS.**—There is little demand for book-papers nor do dealers anticipate that there will be until the first of the year, although jobbers are not asking for cancellations and are absorbing the mill product readily. Although warehouses are filling up with book and other stock the jobbers will take the mill output, particularly in respect to those orders placed months ago at satisfactory prices prevailing at that time, and some of which orders are still unfilled. Prices remain firm and no serious recession is looked for, although dealers admit that the future is clouded in this respect and that it is hard to pierce the veil. Prices may come tumbling down but if they do it will cause surprise to a good many jobbers and manufacturers who only admit the likelihood of a slight and gradual decline. They claim that what happened in the sugar market cannot occur in paper circles for the reason that the paper interests are made up of business men and not speculators. The paper situation as it is today is not causing either the Canadian jobber or the manufacturer any very great uneasiness, according to the statements of most of those in the business, and this is borne out by the fact that jobbers are absorbing

mill shipments of book and most other lines of paper in the firm belief that the present lull in buying is only of a temporary character.

**WRAPPING PAPERS.**—There is no change in the general situation in respect to wrapping papers. Business has picked up considerably during the past week, probably owing to the near approach of Christmas. There are no large stocks of wrapping on hand at the warehouses and mill shipments are coming through freely. Prices remain firm and demand rather light except for the extra business being done due to the Christmas season.

**GLASSINE AND GREASEPROOF.**—Dealers report a fair demand for these classes of paper although in common with other lines there has been a distinct falling off of late and the consuming trade is buying nothing beyond its immediate requirements. A resumption of free buying is predicted after the opening of the new year. Unbleached greaseproof is still quoted at 22c and bleached at 25c while glassine is selling at 35c for bleached and 30c for unbleached.

**KRAFT.**—There is a distinctly quiet trend in the kraft trade and the mills are getting no big orders, although the jobbers and consumers are absorbing all the product the mills are offering. There do not appear to be any heavy stocks on hand and buying is not above immediate requirements. There have been practically no cancellations and those in the trade say that the present lull is only temporary and that early in the new year buying will be back to normal. In the meantime prices for both kraft and manilas are holding firm.

**COATED PAPER.**—The coated paper mills are in a pretty fair position with some of them having orders on hand to keep the wheels running for two or three months. So that should the present dull period continue throughout the greater part of the fall a fairly satisfactory amount of business will still be guaranteed. Some of the mills report a few cancellations but these are not large in the aggregate and for the most part the coated paper business may be said to be in good shape. One mill man stated that he could use considerably more paper than the manufacturers were sending through and that the demand was still greater than the supply.

**TOILETS AND TISSUES.**—Small quantity buying and a very light demand still characterize the light-weight paper trade and what sales the mills are making are small. In spite of the slackened demand prices continue to hold firm and no immediate drop is looked for. Mills report that they are experiencing no difficulty in getting raw stock, both bleached and natural sulphite being obtainable in required quantities and at easier prices.

**RAGS AND PAPER STOCKS.**—New cotton cuttings have commenced a downward slide in sympathy with other grades of paper stock. Practically all grades show a decline from two to three cents below last week's quotations. In old cotton rags the market has been practically lifeless and one of the oldest and most representative members of the trade states that he does

not recollect the paper-making supply market having been in such a dull condition as now exists, in the past twenty years. The consuming mills are buying almost nothing and dealers have stopped buying material altogether. With quotations as low as they were last week it was hardly expected that, with the prevailing cost of labor, prices could slump any lower. However, with some of the mills practically closed down, or working on short time, the lower grades of waste paper have practically no market value and all prices quoted are a case of the dealers asking prices, rather than any indication of the actual market value. Hard and soft shavings have weakened slightly though these are about the only grades that are moving at all and, were it not for the fact that book mills are buying small quantities, paper stock dealers would be practically closed up. With the present prices and the cost of handling material even were the dealers to get their supplies for nothing, there would be no profit in handling mixed papers today, according to the statement of one Toronto dealer. Dealers are not at all optimistic about conditions for the next month or so and a very dull winter season is looked for.

Following are quotations on rag and paper stock:

	Per Cwt.	F.O.B. Toronto
No. 1 shirt cuttings . . . . .	\$19.00	—\$20.00
No. 1 unbleached cotton cuttings . . . . .	\$15.00	—\$16.00
No. 1 fancy shirt cuttings . . . . .	\$10.00	—\$10.50
No. 1 blue overall cuttings . . . . .	\$ 9.50	—\$10.00
Bleached shoe clip . . . . .	\$14.00	—\$15.00
White cotton hosiery cuttings . . . . .	\$16.00	—\$16.50
Light colored hosiery cuttings . . . . .	\$12.50	—\$13.00
New light flannellette cuttings . . . . .	\$14.00	—\$14.50
No. 2 white shirt cuttings . . . . .	\$10.00	—\$11.00
City thirds and blues (repacked) . . . . .	\$ 2.25	—\$ 2.50
Floeks and satinettes . . . . .	\$ 1.00	—\$ 1.20
Tailor rags . . . . .	\$ 0.90	—\$ 1.00
Gunny bagging . . . . .	\$ 1.25	—\$ 1.50
Manila rope . . . . .	\$ 5.00	—\$ 5.25
No. 1 white envelope cuttings . . . . .	\$ 7.50	—\$ 8.00
No. 1 soft white shavings . . . . .	\$ 7.00	—\$ 7.50
White blanks . . . . .	\$ 4.00	—\$ 4.25
Heavy ledger stock . . . . .	\$ 3.50	—\$ 3.75
No. 1 magazine . . . . .	\$ 2.00	—\$ 2.15
No. 1 book stock . . . . .	\$ 1.80	—\$ 1.90
No. 1 manila cuttings . . . . .	\$ 4.00	—\$ 4.25
No. 1 print manila . . . . .	\$ 1.00	—\$ 1.25
Folded news . . . . .	\$ 1.00	—\$ 1.10
Over issue, news . . . . .	\$ 1.25	—\$ 1.50
Kraft . . . . .	\$ 3.75	—\$ 4.00
No. 1 clean and mixed papers . . . . .	\$ 0.45	—\$ 0.60

### NEW YORK MARKETS.

New York, December 11—(Special Correspondence)—As the end of the year draws near, demand for paper becomes quieter. This is the usual condition at this season but this year it is more accentuated than ordinarily for the reason that jobbers and consumers are purchasing in closer fashion today than in a long time. With prices, not only on paper but on various commodities, on the downtrend, consumers are exerting every effort to reduce their stocks of goods to as low levels as possible, and this results in printers, publishers, department stores, boxmakers and other consumers of paper and paper board confining their current buying solely to quantities actually and immediately required. Jobbers in turn are more intent on liquid-

ating stocks than in augmenting their holdings, and mills in consequence are receiving few orders involving sizable tonnages of paper of any kind. Manufacturers are mostly pursuing a waiting and watching policy and are letting matters take their course. Despite prevailing market conditions, there is no disputing that the cost of producing paper has decreased but slightly, and mill owners are in numerous cases shutting down their plants and curtailing production rather than continuing to make paper to be forced on an unwelcome market. There is a feeling of confidence among manufacturers that demand for paper is coming back, and strong at that, soon after the turn of the year. It is believed that lower commodity prices can lead only to larger consumption of various articles which are wrapped in paper or boxed in paper boxes, and that cheaper prices will also result in keener business competition, thus making for increased advertising and a resultant heavier consumption of newsprint and book papers. The outlook indeed is bright, and in the meantime paper producers are marking time awaiting developments.

The sales manager of a large Middle West paper mill sizes up conditions as follows: "There is a lull in the paper market now. I refer particularly to wrapping paper, stock suitable for advertising matter and stationery. But the frantic telegrams for supplies in these lines every morning, in the form of night letters, simply prove to me what I believe, namely, that the buyers, and their buyers in turn, are holding off, waiting for lower prices. Naturally you expect me to give a view that will boom the market. It doesn't need my booming at all. I am saying that those who don't buy regularly will be disappointed. Freight rates are a tremendous factor in handling paper today. Coal is \$12 to \$22, and our contracts haven't run out, although coal prices are lower. We couldn't afford to take chances. Every indication is for a higher market. Twenty-seven hundred pounds of rags go into a ton of paper; remember that. You will not be able to get paper when you want it for some years to come."

The outstanding development in newsprint of the week is the announcement, by the Great Northern Paper Company, that its price for newsprint in rolls of carload lots on contract for the entire year of 1921 will be 5 cents per pound f.o.b. mill. Great interest is attached to this because Great Northern is the second largest single producer of newsprint paper in the United States, having a yearly output of approximately 250,000 tons. The price fixed for next year is an advance over prevailing rates, Great Northern having booked contracts this year at from 4 to 4.50 cents a pound. This company's price has little influence on the market. Great Northern has long sold its entire output to the same clientele of customers, and but seldom has paper to dispose of in the open market. The Great Northern Paper Company has, ever since it was organized, been looked upon as able to manufacture newsprint cheaper than any other mill in the country, owing to the natural advantages it enjoys, and it is hardly likely that any other producer of print paper will book contracts at a price of 5 cents for the coming year. It is to be understood that this is a price basis and subject to variations which may increase it before 1922.

The spot market for newsprint is rather quiet although some business is current, and prices are holding steady at around 7 cents a pound at shipping points, with some mills asking and obtaining 8 cents





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for roll news. In fact, the opinion is expressed that no large tonnage can be bought for spot shipment at less than 8 cents. There are some offerings of foreign newsprint at around 7 cents for delivery early next year, but uncertainties regarding shipment are discouraging many buyers.

Certain manufacturers are reported to have announced additional slight reductions in prices on book papers, whereas continue to quote the same figures as heretofore. An average basis on machine finished book in the open market is about 13 cents a pound, and on supercalendered book approximately a cent more. Tissues and wrappings are quotably unchanged and are moving well on contract but in comparatively small amounts for this season of the year to transient buyers.

Boards are in slightly livelier market position. Several mills which were closed down have resumed operations, having accumulated a fair tonnage of orders, and quotations are characterized by a little better tone, with mills naming \$50 per ton for plain chip board and \$55 for news board.

**GROUND WOOD.**—Buyers of ground wood are operating in spasmodic fashion and are absorbing, in the aggregate, but a light tonnage of pulp. Sales, in fact, are so few and far between and are of such small volume, that scarcely an established market exists, as a result of which it is difficult to ascertain what definite prices are. Foreign ground wood has sold in New York this week on an ex dock basis at \$87.50 and \$90 per ton and quotations on domestic prime pulp for prompt delivery are at about \$95 to \$100 at grinding mills, but whether or not supplies could be purchased at lower prices is problematical though indications are they could in at least some quarters. There seems little doubt that mechanical pulp prices have seen their highest for a long time, and yet there are numerous members of the trade who readily predict that the market will witness an advance when consumers resume buying in something approaching normal tonnage.

**CHEMICAL PULP.**—Trade in chemical wood pulp is narrow and prices as they stand at present are at best nominal. Producers and dealers for the most part are not pressing buyers, yet signs are not wanting that some sellers are anxious to move certain lots of pulp and the probabilities favor buyers being able to secure such supplies at marked concessions. Importers say that the prices quoted by Scandinavian shippers do not permit them to buy on the other side of the Atlantic and sell to paper mills here at a profit in competition with domestic pulps. Norwegian bleached sulphite, it is declared, cannot be landed in this country to sell at under 10.50 cents a pound ex the dock, and it is stated

that practically no profit can be realized at this price. Similarly, foreign easy bleaching sulphite costs around 8.75 cents to land here, and Scandinavian kraft pulp at least 5.50 cents.

Domestic pulp prices are at the same nominal levels previously noted, with most of the transactions recorded at concessions.

Importations of wood pulp at the port of New York this week including 3,217 bales from Gothenburg, and 8,000 bales from Sundsvall.

**RAGS.**—There is very little life to the papermaking rag market. Mills are not buying excepting in a desultory way, most of them having less need for rags than normally while running on short time, and being more intent on reducing stocks than in augmenting holdings because of the approach of the time when they compile inventories. Prices on rags are quite irregular, and buyers in most cases are finding no difficulty in obtaining needed supplies at less than what dealers ask, especially those who are willing to make prompt payment for shipments. This of course indicates that dealers are anxious to liquidate their stocks also and that they are accepting orders at concessions because they can replace, if they so desire, at appreciably lower costs.

Receipts of foreign rags at this port during the current week include 348 bales from Genoa, and 74 bales from London.

**PAPER STOCK.**—While demand from some box board mills has broadened slightly, activity in old papers continues on an extremely narrow scale, and there is little of interest to report regarding market conditions. Mill orders, with few exceptions, are limited to a few carloads at a time, and there is not enough demand to absorb the present output of stock notwithstanding that virtually every packer in this part of the country has drastically reduced his production. As would be expected under these conditions, buyers are obtaining the small supplies wanted at close to their own figures. No. 1 mixed paper have sold to mills at 40 cents per 100 pounds at shipping points, folded newspapers at 65 cents, heavy book stock at 1.65 cents, white blank news cuttings at 3.25 cents and No. 1 packing of old kraft papers at 3 cents. Shavings are held with relative firmness and yet this class of old paper can be purchased also at recessions, No. 1 hard white shavings being quoted at around 7.50 cents per pound and No. 1 soft white shavings at 6.75 cents.

**OLD ROPE AND BAGGING.**—Paper manufacturers are mostly neglecting old bagging and prices are decidedly soft at around 1.75 to 2 cents for No. 1 scrap bagging, 75 cents a hundred for roofing bagging, and 2 to 2.25 cents on gunny bagging. Old rope also is in

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slack demand and prices are merely holding their own at a quotable basis of 5 cents or slightly less at shipping point for No. 1 Manila rope.

Receipts of foreign old rope at New York this week include 93 coils from Bristol.

### PAPER STOCKS INCREASE IN U. S.

Stocks of all grades except newsprint, and book, increased during October. Stocks of all grades reported by manufacturers at the end of October amounted to 176,951 tons, including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported newsprint stocks and tonnage in transit aggregating 235,481 tons.

Comparing the stocks on hand at the domestic mills on October 31, with their average daily production based upon the combined production for 1917, 1918, and 1919, the figures of the Federal Trade Commission show that:

Newsprint paper mill stocks equal about 5 days' average output.

Book paper mill stocks equal slightly more than 7 days' average output.

Paper Board mill stocks equal about 7 days' average output.

Wrapping paper mill stocks equal about 9 days' average output.

Bag paper mill stocks equal slightly less than 5 days' average output.

Fine paper mill stocks equal about 26 days' average output.

Tissue paper mill stocks equal slightly less than 15 days' average output.

Hanging paper mill stocks equal slightly less than 7 days' average output.

Felts and building paper mill stocks equal about 14 days' average output.

Miscellaneous paper mill stocks equal slightly more than 19 days' average output.

Total paper mill stocks of all grades equal about 9 days' average output.

### Imports and Exports.

The imports and exports of all grades of paper for September, 1920, compared with September 1919, as shown by the records of the Department of Commerce were as follows:

	Sept. 1920 Value	Sept. 1919 Value
<b>Imports:</b>		
Newsprint	\$6,703,303	\$3,308,723
Book Paper	32,528	1,057
Wrapping	79,181	63,771
Hanging	20,757	9,901
All other grades*	241,262	138,006
<b>Exports:</b>		
Newsprint	451,561	481,136
Book Paper	981,151	799,229
Paper Board	155,211	320,507
Wrapping	564,121	371,013
Bag	209,085	75,359
Fine	588,023	658,011
Tissue	216,112	129,437
Hanging	95,805	68,161
All other grades*	1,019,321	519,614
Total Imports	7,080,031	3,521,458
Total Exports	1,140,029	3,426,097

\* Includes some paper already converted into commercial articles.

### Loss of Production.

A comparison of machine hours lost time in different grades due to lack of orders with the total time lost throws an interesting light on conditions. The total is about 48 per cent. more in 1920 than in 1919 and 25 per cent. was for lack of orders.

	Lack of orders		Total	
	1920	1919	1920	1919
<b>Newsprint:</b>				
Number of machines..	3	0	25	32
Total hours idle . . . .	448	0	2,186	1,089
<b>Book Paper:</b>				
Number of machines..	0	10	59	80
Total hours idle . . . .	0	867	6,879	5,181
<b>Paper board:</b>				
Number of machines..	66	30	242	180
Total hours idle . . . .	14,056	5,639	45,886	25,453
<b>Wrapping:</b>				
Number of machines..	7	5	72	73
Total hours idle . . . .	953	918	9,851	10,432
<b>Bag:</b>				
Number of machines..	0	0	11	14
Total hours idle . . . .	0	0	445	1,330
<b>Fine:</b>				
Number of machines..	15	34	79	83
Total hours idle . . . .	2,933	7,713	11,692	12,538
<b>Tissue:</b>				
Number of machines..	25	9	66	59
Total hours idle . . . .	3,454	2,671	9,780	7,863
<b>Hanging:</b>				
Number of machines..	0	0	13	15
Total hours idle . . . .	0	0	1,082	1,193
<b>Felts and Building:</b>				
Number of machines..	10	7	35	41
Total hours idle . . . .	1,599	258	5,850	1,397
<b>Other Grades:</b>				
Number of machines..	6	4	25	32
Total hours idle . . . .	1,166	1,060	3,181	2,565
Total No. of machines..	132	99	627	609
Total hours idle . . . .	24,609	19,126	96,832	69,041

### A FOOL'S SAFETY RULES.

1. —Don't have anything to do with Safety First. If you do you cannot ride poly, besides you will have to think.

2.—Don't be afraid to take a chance. Try anything once. If you get killed the wife can wash for a living; besides she can say that you were a brave man.

3.—Don't waste any time with a Safety man or any of his warnings. He's crazy.

4.—When you get something in your eye don't go to a doctor. Get your buddy to use his dirty red handkerchief. Don't let him wash his hands—the more dirt the better. Don't ever think about wearing goggles; they are heavy and you cannot see through them. Just carry them in your pocket to fool the boss. Besides you will look so silly in them.

5.—When you fell a tree never step back. If it does hit you the insurance company will pay the bill, and if you don't get hit, just think of the walking you have saved.

6.—Be as careless as you like. That's your business. Laugh at the safety signs. Don't worry about getting killed, for you have only one time to die, and being careful will not make your life any longer.

Common Sense.

# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

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No. 52

## TABLE OF CONTENTS

### Editorial.

Greetings.....	1295
Christmas is here.....	1295
For the love of Mike!.....	1295
The annual meeting.....	1296

### Special Articles.

The convention week of the Industry....	1297
What the woodsmen did in Toronto....	1298
Logging and driving in Sweden.....	1299
Lubrication of ball bearings.....	1302
The paper making qualities of Algerian mallow.....	1303

### News of the Industry.

Sweden curtails paper output.....	1301
Putting the axe to accidents.....	1304
Summary of the Belgian trade.....	1304
Pulp and paper news.....	1305

International Pulp mill to start soon....	1308
United States notes.....	1308
Paper mill workers to go on salary basis.	1314
Lumber and pulp from St. John to U. S. .	1315

### Miscellaneous Informations.

Eleemosynary means "Not for gain"....	1301
Are of contact.....	1304
Review of recent literature.....	1306
New directory and market data book....	1308
New patents.....	1309
To find the weight of any number of sheets of paper.....	1309
How the printer starts.....	1314
About our advertisers.....	1315
The Bolsheviks of 1838.....	1315

### Markets.

Canadian trade conditions.....	1310
New York markets.....	1312

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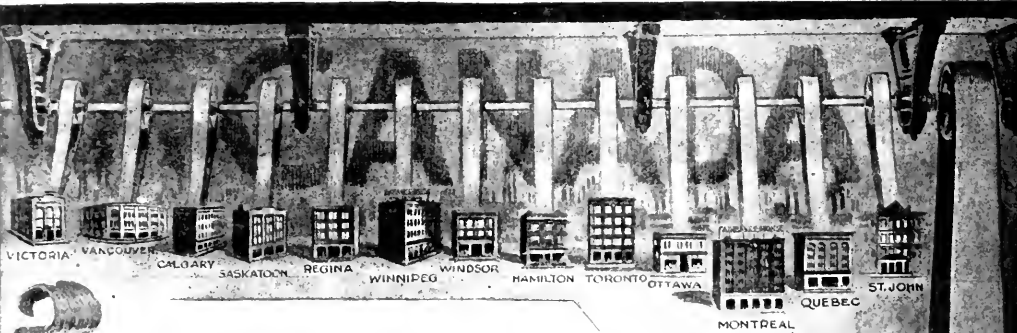
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J. NEWELL STEPHENSON, M.S. Editor.

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# EDITORIAL

## GREETINGS.

Greetings to all of our readers,  
A toast to your health we would raise,  
We wish you a right Merry Christmas  
And happiness *all* of your days.

## CHRISTMAS IS HERE!

Merry Christmas in our letters, Merry Christmas to our friends, Merry Christmas in the windows, once begun it never ends. The Christmas spirit, all prevailing, seeks each heart and tries to rouse sympathy in those who have much, and a spark of joy and gladness in those who have not wealth, nor favor, counted out in things of earth, but whose hearts respond in the gladness to the message of Christ's birth.

For many centuries now, men of many colors and creeds have celebrated the birthday of Jesus. After the manner of the men of the East, we give gifts to one another, usually in value proportional to the ability of the recipient to buy expensive things for himself. Many of us are not truly emulating the Wise Men in this respect, since they gave their gifts to Jesus. The fact that centuries have passed since He lay in the manger does not lessen our opportunity nor our obligation to bring gifts to Him. "Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto Me." Giving to those who are dear to us is not without its blessing to us and them, but there are many of "these least" and it is in giving to them that we give most directly to Him. Is it not fitting, then, to discover at this joyous Christmas time, some of those whom fortune has passed by and pass on to them as a birthday gift to the Baby of Bethlehem, some of the bounties that have been heaped at our doors?

Santa Clause was born in Europe but many parts will see no sign of him this year. Those children, more than *three million* of them, are not asking for toys and dolls but for milk and bread. Thousands will die this winter in Europe and China for want of a crust, while we sit down to more than we can eat. Not that we shouldn't enjoy what we have. We should, and be thankful for it. But there are thousands in Canada and the United States who, by a little sacrifice, could give the ten dollars, once or many times, that will keep alive a child who is just as dear to the Father as we and ours. Let us add to one joy then at this happy time by really giving to Him, by giving, not only what we can spare, but what costs

us something, to those who are in great need. Cheques, bonds or cash may be sent to the Canadian Red Cross, Belmont Park, Montreal, or "Child Feeding", c/o The Literary Digest, New York, for children in Europe, or to Rev. Robert Laird, Confederation Life Building, Toronto, for the famine fund for China. Only immediate relief will save the millions. It's up to us. Let's do it, and then with full hearts wish each other, as we do our readers, a very Merry Christmas.

## FOR THE LOVE OF MIKE!

Who is Mike? Mike is any fellow that works in pulp and paper mills in Ontario. He may be yourself or the fellow who works by your side. It is for the love of Mike that safety work is carried on in our industries. Even the financial aspect of accidents and their results cannot be considered apart from regard for individuals. Human beings have a value which cannot be measured in the same terms as mechanical equipment although for the purpose of estimating, reporting and comparing the severity of accidents it is necessary to attach an assumed value to a man's life in terms of working days and dollars. The earning power of a man's finger or foot is also figured on a similar basis. It would be hard to find a man who would deliberately sell a finger or an eye, or his life, no matter what value, for industrial reasons, might be placed thereon. The Workmen's Compensation Acts of our various provinces attempt to work out the insurance of, and recompense for such losses in as fair a manner as possible. Where, when, and to what extent such compensations shall be applied are questions almost entirely to be answered by Mike and the man who works with him.

The answer to Cain's question "Am I my brother's keeper?" has been given most emphatically in the affirmative by all who have given the slightest consideration to the matter of accident prevention and health promotion. One of the most important and efficient agencies, in fact, practically the only organized agency in Canada distinctly among paper mills for the carrying on of this important industrial and humanitarian service, is the Ontario Pulp and Paper Makers' Safety Association. It is important indeed, that the Canadian Pulp and Paper Association has not established a safety section which might co-ordinate the activities and inspire the efforts of all Canadian pulp and paper mills along this most commendable line of work.

The Ontario Association, of which Mr. A. P. Costigane is the energetic secretary and safety engineer, is continually endeavoring to find new ways of extending the safety spirit and promoting safety work. The latest plan is an annual competition among the mills of Ontario for a safety shield. Details of the competition and the rules of the game are printed on another page of this issue. Mills are divided into two groups in order to make conditions more comparable. Two shields are therefore offered, one for each group. All circumstances make it necessary to have contesting mills on their honor to report *all* accidents, which of course, they will do, and the object of the contest makes it the duty of each mill and man in the industry in Ontario to get into the game.

While this competition appears to be among mills it will be readily seen that it is really the individual workman who is the contestant. Without the constant attention to safety first principles of every man in the mill, there cannot be very great expectation of success. When a baseball or a hockey team represents the mill most employees take an interest and pride in their efforts but the burden rests on a comparatively few men to act for a large number. In the contest for the safety shields, however, the whole mill is on the team and each man counts as one. Furthermore, the man who is injured or who causes an injury, not only fails to play his proper part in the contest for the prize but he makes it difficult in many ways for his mill to play its part in keeping Canada to the fore as a producer of a commodity which the whole world requires. The joy of contest can hardly be paralleled by any other experience and when winning the shield and the banner at the same time brings health, wealth and happiness to the winner, we have the elements of an ideal competition. This contest of the safety association has the additional advantage that no matter who wins the shield, every mill and every individual benefits in the other three respects directly in proportion to the efforts of each man in the organization. It is to be hoped therefore, that every mill in Ontario will set to work with a determination to win the shield. The wise mill will start at once to get its team in training by eliminating all accidents for the rest of the year. The habit of winning will then bring the desired result for 1921 and the shield will hang in a conspicuous place where every employee may view it with pride.

#### THE ANNUAL MEETING.

Every annual meeting of the Canadian Pulp and Paper Association has been better than the one before. Don't let this one be an exception. Its point of program it would be hard to conceive a more comprehensive collection of timely and interesting topics for discussion.

The Canadian Pulp and Paper Industry is unique

in the way it is associated with the various natural resources and lines of economic development in the Dominion. The scope of the Industry embraces the forest, the mills, and the agencies for converting and distributing the product. All are organized in associations that are working in harmony for the best interests of those engaged in the industry. The Canadian Pulp and Paper Association functions largely through its Sections, all of which have been actively engaged in important constructive work during the past year. The reports of the various chairmen will form the basis for even better work next year if all who are interested will attend the Section meetings and help the work along by suggestive criticism, information and advice. It will be quite worth while for managers, superintendents, and others, to attend the other meetings of Convention Week, January 19-21, as far as possible. In addition to the Woodlands and Technical Section meetings, it is expected that the Newsprint Service Bureau will again meet in Montreal during that week.

#### COBWEBS.

There will be fifty-three issues of the Pulp and Paper Magazine this year, because New Year, 1920, fell on Thursday.

United States funds sold at a premium of 19 per cent. in Montreal this week. At the same time a report came from Washington that wheat, which is Canada's principal commodity is to be taxed 30 cents a bushel. This is approximately the average rate of exchange during the past year, but it works the other way. Unless bills of exchange can be bought at a fair rate, purchases in the United States cannot be made. By shutting the door on Canadian wheat, Congress may be excluding a large proportion of Canada's purchasers and switching them from American to British, French, and other manufacturers. With the Canadian dollar worth about \$1.17 in London, but only \$.84 or less in New York and Congress making it increasingly difficult for Canadians to pay their bills in the United States, it is probable that more goods will be manufactured here for home consumption and a larger proportion bought in England.

Canadian educators are going at the problem of vocational education in the right way. Plans are being made for vocational training of those who will be the teachers. This is in line with the recommendations of the Committee on Education on which the Canadian Pulp and Paper Association, along with other business, industrial and scientific organizations, has a representation.

King Alexander had no monopoly on the simian; our baby also has a pet monkey—wrench.



# The Convention Week of the Industry

A preliminary notice of meetings during the week of the 17th of January has been sent out by the Canadian Pulp and Paper Association with a request to all members of the industry to make a point of attending the different sectional meetings in which they may be interested.

The program commences on Wednesday, January, 19th, with the Annual Meetings of the Woodlands Section in which will be merged the Annual Meetings of the St. Maurice and Quebec Forest Protective Associations. These meetings will be held at the Windsor, and the Annual Meeting of the Technical Section will open at the same time in the Ritz Carlton Hotel.

The program for the Technical Section Meeting is one of exceptional merit, and members of the industry will be glad to learn that Mr. F. G. Warburton, who represents the Harland Engineering Co. will give a paper on the "SPEED INTERLOCK AS APPLIED TO PAPER MILL MACHINERY."

The other papers cover a wide field, and every member of the Technical Section will find something of interest. Two days have been set aside for the Technical Section meeting so that there may be plenty of time for discussion and constructive work.

Mr. Gartland will give us a Paper on "MICROSCOPY AND ITS RELATION TO THE MANUFACTURE OF PULP AND PAPER" and Mr. H. N. Lee, who is well known to most of the members, has been invited to contribute to the discussion.

Some of the members obtained so much information from Mr. H. S. Taylor when he gave his last paper on "Gypsum Roofs" at the Soc. that he has been invited again to present a paper on the "PROBLEM OF VENTILATION IN THE PAPER MACHINE ROOM."

Mr. F. J. Hoxie has been invited to get together all the available information on the spraying of wood piles with a view to assisting an open discussion on the "VALUE OF MIST-SPRAY IN THE PROTECTION OF WOOD FROM FIRE."

Some of the members have asked for a discussion on steam plant auxiliaries and a paper will be given by an authority on an analysis of steam plant auxiliaries. Every mill man has his own pet appliance and it will be of value to the members to have a frank and open discussion on the value of different appliances.

The paper mill has not been overlooked in

the choice of Papers and W. B. Campbell has been invited to give a Paper entitled "BEATING, TODAY AND TOMORROW". The subject of beating is practically inexhaustible but Mr. Campbell will try and throw some new light on its development.

On Thursday, the 20th, in the Windsor Hotel, will be held the Annual Meeting of the Canadian Forestry Association, and on Friday, the 21st, the Annual Meeting of the Canadian Pulp and Paper Association will take place at the Ritz Carlton Hotel, followed in the evening by the Annual Dinner which has become of late years the principal social event of the industry.

In notifying the members of the Industry the Secretary of the Association has asked each member to pay special attention this year to the various meetings of Sections.

Each member will be advised shortly as to the date and place of such meetings, which will be arranged ahead of the main Association gathering so as to provide plenty of time.

In the circular which has been sent out this week to the various mills the following reference to Association work is of timely interest.

Mr. Chas. Chesney, President of the Silk Association, says:

"Associations in groups, either large or small, generates a group feeling or class consciousness, and powerful, indeed, must be he who would or can withstand it. Love of family, patriotic pride, adherence to the established principles and practice of our trade, are things quite apart from personal affection, individual loyalty and business honesty. Thus, in creating and defending sound practice, just dealing, business loyalty and the community of spirit and of fellowship, we are fulfilling a high mission."

The aims of the Association are reviewed as follows:

- To make the business of making pulp and paper the biggest thing in Canada.
- To make better pulp and paper.
- The collection of statistics and the exchange of data.
- Exact records of imports and exports.
- Study of freight rates and defending the industry against unjustified rate increases.
- The question of tariffs.
- The protection and production of our raw material—the forest.
- The improvement of technical methods.
- The spread of education among the workers of the industry.

## What The Woodsmen Did in Toronto

The Woodlands Section of the Canadian Pulp and Paper Association held an extremely interesting and well attended meeting at the King Edward Hotel, Toronto, on December 8th and 9th which was presided over by Brig.-Gen. J. B. White, of Montreal, Chairman of the section. The papers read and the discussions that took place covered a wide range of topics as they relate to reforestation and conservation while there were many exchanges of ideas among the delegates as to the best methods of preserving the country's great timber wealth.

Among the delegates noted at the gathering were: Brig.-Gen. J. B. White, Edward Beck and A. L. Dawe, Montreal; Clyde Leavitt, Rolland D. Craig, Clark B. Davis, T. W. D. Wright, Ottawa; L. L. Brown, A. P. Costigane and George Carruthers, Toronto; Col. Leckie, Ottawa; A. W. Tromley, Quebec; B. F. Avery, Sault Ste. Marie; O. M. Porter, American Pulp and Paper Association, New York; T. T. Kenny, Buckingham, Que.; P. L. Seabrooke, and S. L. de Costerel, Quebec; R. A. Lyons, W. W. Bowden, J. A. Walker, C. R. Townsend, T. Ehn and Ellwood Wilson, Grand'Mere; Robson Black, Ottawa; Thomas La Pointe, Garthby, Que.; R. W. Richardson, Gould, Que.; A. R. Fenwick, W. R. Haddow, Toronto; Harold Buck, Sault Ste. Marie; E. J. Lasehinger, Robert C. Hoxie, Toronto; H. Graeslund, Stockholm, Sweden; T. H. Anson and H. C. Schanche, Iroquois Falls; G. H. Edgeworth, E. F. McCarty, Ottawa; D. C. A. Galarneau, Three Rivers, Que.; F. T. Jenkins, W. D. Crain, D. J. Newro, J. D. B. McFarlane, G. Cousins, C. E. Westland, C. E. Foote, W. T. Faulkner, H. L. Hughson, C. H. Irwin, J. Irwin, O. C. Thrupp, C. D. Howe, of the University of Toronto; M. N. Miller, O. M. Robinson, Toronto.

Following the address of the chairman, Dr. C. D. Howe of the University of Toronto, read a paper on "Performance of a Few Culled Acres" which had to do with the problem of securing re-growth by natural means. Dr. Howe's conclusions were against the idea of allowing the trees to take care of themselves. His investigation and observation on a given area of land for a given period led him to the conclusion that spruce did not show much of a disposition to reproduce itself under normal conditions.

He stated that the natural re-growth of trees could be aided and stimulated by proper methods with better results than wholesale replanting. He gave no indication that wood would be cheaper in Canada owing to the fact that it was necessary to go further away for supplies, and stated that the tendency was for increased cost as time went on. Consequently forest pulpwood would become more expensive naturally.

Dr. Howe declared that there was ample authority for stating that Canada's commercial available pulpwood supply was not sufficient to last more than fifty years under present circumstances. However, in British Columbia, in parts of Ontario and in Quebec there were still unlimited supplies inaccessible for many years to come.

When the question of using hard woods for pulp was brought up it was stated that the Laurentide Company is already experimenting along this line. If this proved to be satisfactory it would be possible to sweep the forests.

At the session Ellwood Wilson also gave an interest-

ing report on the Imperial Forestry Conference.

Most of Wednesday afternoon's session was devoted to papers by H. Graeslund of Stockholm, who has been sent out by the University of Stockholm to study reforestation in Canada, and a fellow countryman, T. Ehn, both of whom dealt exhaustively with various aspects of forestry conservation in their country, describing the lumber, logging and planting operations existing there as well as the educational system designed to preserve and foster the forests of Sweden.

During the session, Mr. George Carruthers, President of the Interlake Tissue Mills, urged a strong point of contact and cooperation between the old school of reforestation and the younger men coming from the universities. While on the subject Mr. Carruthers threw out the idea that it might be well for the Government to look into the profligate cutting down of trees for Christmas festivities and whether or not it would be more in accord with forestry conservation to preserve these trees to be eventually built into houses for the children rather than use them as forms of entertainment. In this connection Mr. Carruthers strongly urged the education of the children in the schools to a high appreciation of trees. As a substitute for the regulation Christmas tree, Mr. Carruthers somewhat humorously suggested some sort of tree that could be folded up and used from year to year.

Most of the closing session of the gathering was devoted to a discussion on aerial patrol work in forestry protection when much information was forthcoming from representatives of several of the pulp wood concerns and from Lieut. Col. Leckie of the Canadian Air Board.

Mr. Graeslund's paper was published last week and Mr. Ehn's address will be found on another page of this issue.

### DANSEREAU PULP & PAPER CO., SOREL.

The Dansereau Pulp and Paper located at Sorel, P. Que., will start building operations on their mills in the spring. Plans are now being projected and a survey is being taken of the site, which is on the south side of the Richelieu River.

Mr. J. H. Dansereau, of Montreal, is to be the President of the new company, which will have a capitalization of about \$5,000,000 privately subscribed.

The company hopes to commence operations in the fall of 1921, and will manufacture Mechanical Pulp for a year. A daily output of at least forty tons is expected, while the mills can handle eighty tons daily, working at full capacity. After a year, sulphite pulp will be manufactured and by the end of 1923 the company will be producing 100 tons of newsprint daily.

### CLOSE PULPWOOD CONTRACT.

The "Union Co-operative Agricole," of Harricana, Abitibi, has signed a big contract with the International Company of New York, for pulpwood, at very fair prices.

Safety is sound sense and good business, says the Safety League.

# Logging and Driving in Sweden\*

By T. EHN, Forester, Laurentide Co., Grand-Mere.

The conditions for logging and driving in Sweden are about the same as in Eastern Canada. Plenty of rivers and lakes, with the hauling-roads very seldom longer than 3-4 miles, and the fact that the rivers mainly run from north-west to south-east makes them excellent for driving. The importance of this direction can easily be considered if a comparison is made with Northern Russia. The rivers there run in the opposite direction, and driving in spring is almost impossible, owing to ice-dams and too high water in the upper parts of the rivers.

Now to come back to my subject. I will start with the planning for one winter's logging, and we will follow the methods of one of the biggest lumber concerns.

Early in summer the chief forester gets an approximate figure of the amount of logs and most desirable dimensions wanted for the saw-mill, and at the same time, from the superintendent of the pulpmills, his estimate of pulpwood requirements for the coming year.

In the cutting plan for his woodlands, he will soon find out how much he "can" cut without endangering the perpetuation of his forests. Now the question is: Is it more profitable this year to cut a little less than he really can and buy a little more from farmers of the Government, or vice versa, considering the existing high prices? Anyhow, when he has made up his mind how much to cut, he tries to concentrate his logging operations in order to cheapen the work as much as possible. The best cutting methods for the different stands in the area to be cut must be found in the above-mentioned plan, and the preparation work on the ground can thus start.

The first thing to do is to locate the hauling-roads. After this comes the stamping of the trees.

Every tree to be cut is marked at breast height, and a piece of the bark, about 1 foot long and 3 inches wide, is cut away and a stamp-mark applied—different for different companies, but always the same as one of their own driving marks.

Figured at \$4.00 per day for a man, the costs are:— On the road, \$30.00 per mile; Tree stamping, 0.8 cents per tree.

The stamping is done by blocks, each block having the area and number of trees which, depending on the length of the hauling-road, the density of the stand, etc., is considered enough for one winter's work for a crew with one horse. The blocks are marked out by painted lines, and numbered in the corners and where the lines pass a road.

When laying out the blocks, one must try to place them so that jobbers get an equal part of the hauling-road, so that one need not pass over another's block with his skidding roads, which is often a cause for a quarrel between the jobbers and trouble for the Company.

The stamping is usually finished in August.

All logging in Sweden was formerly done by small

jobbers, with, usually, one or two horses. The main points of a contract between a jobber and a company are:—

Point 1.—All stamped trees have to be cut; if not, the jobber has to pay the value of the trees left.

Point 2.—If trees not stamped are cut, the jobber has to pay \$5.00 in cash on those trees.

Point 3.—For each stump higher than two inches from the highest root, he is fined 50 cents, and the same amount for tops left bigger than the smallest dimension to be cut.

Point 4.—All trees, when cut, have to be measured and marked for cutting into logs by a forest ranger.

Point 5.—The company has the right in all parts to control the jobber's work, his employment of men, etc.

Point 6.—Money can be given to the jobber covering the progress of his work, provided that 25 per cent remains until his work is approved.

Point 7.—The price to be paid for the work is figured by different methods in different parts of the country. Here are some:—1. A price for each log; 2. Different prices for the logs according to their length and diameter at top; 3. So many cents for each cubic foot middle measure, etc. Which of these methods is the best, it is hard to say, but none of them are very good. For my own part, I think a combination of the first and the third should give a satisfactory result.

When the ground is frozen so he can get over swamps and lakes, the jobber starts his work. He builds his camp, for which he gets from \$40-200, according to whether he has to build a permanent camp, or only one for the winter. In the latter case he has to build the camp so that the spoils as few logs as possible, and his last loads in the spring will be the logs from his camp.

All cutting starts, according to the contract, at the most distant point from the river. For one horse they mostly use the same number of cutters as trips to be made; for instance, for a 3-7 mile hauling they count 2 cutters, for 2-3 miles 3, etc. Besides these men the man who drives the horse always has a helper; his work is to clean up skidding roads, pile logs together, and help the driver to load.

Every cutter works for himself—fells, limbs and barks alone. For felling he uses a one-handed saw 4-4½ ft. long. Axes are of the same construction and weight as those mostly used in Canada.

As the pulp mills are often built in connection with the sawmills, all sawlogs are barked, and the larger slabs from the sawing can thus be used for pulp making. Besides, barked logs are easier to skid and drive, and owing to their better drying, the risk of their sinking is lessened. For the same purpose all pulpwood is strip-barked with strips about 2 inches wide. The number of strips is one less than the log's diameter in top.

For barking a "bark-spade" is used with a 4-4½ inch edge, and a weight of about 3-4 pounds. The handle is 5 ft. long. With this tool the bark is shovelled off comparatively easily. Eight hours work for an average man is 50-60 logs, of which about 25 per cent are saw-logs of about 17 feet in length and 8 inches in diameter, the rest being pulpwood about 19 feet long and 5 inches at the top.

The skidding and hauling are never done in two different operations. The logs are taken to the hauling

\*Address before the Woodlands Section of the Canadian Pulp and Paper Association, Toronto, Dec. 8, 1920.

road and then at once loaded on the sledges. The skidding-sledges are built so that they can easily be lifted and handled by one man. Hauling sledges are mainly of two kinds, one is a long single sledge, the other a combination of two, of which the first one is smaller and carries a much less part of the load than the bigger sledge behind. To lift, or in generally handling the logs, a kind of tongs is used.

These two kinds of sledges are both very good, the single one specially on even and straight roads. On average, a one horse load is in weight about 3 tons, or 100 cubic feet. The hauling roads are kept in excellent condition, 'up' grades are iced, and steep downhill sanded. Often one or more men, according to the size of the operation, are working on the road the whole winter.

The logs were formerly unloaded on the ice, but nowadays not often, because it has been proved that this increases the percentage of sinking. The reason is that when the logs in spring start to thaw out, the cells get enlarged and a vacuum is formed. If in water, the log will thus take up water and get heavier.

This in short is how the logging formerly was, and generally is, done in Sweden. During recent years, however, it has been more and more clear to the men in charge of these operations that machines must be constructed to replace the expensive human power. Several types of motor-saw have been built, but yet, as far as I know, not any of them is really good. Tractors have, on the other hand, proved themselves to be good and cheap lumber horses.

For measuring logs, all companies operating in the same river-valley have formed a sealing association. The organization is, in short, as follows: The river is divided into districts, their number depending upon the average number of logs, and so that each district will have to measure 3-4 million logs. The districts are in charge of a district chief, who directly supervises the measuring, but has to take his orders from the president of the association. A sealing crew consists of two sealers and one note-keeper, of which crew one of the sealers is foreman, but they are equally responsible for their measurements. To make the work possible for the control-sealers, of which there is one for about every 5 gang of sealers, special marks have to be applied on logs which for some reason or another are entirely culled or cut in lengths or diameter. The maximum limit of . . . . . to be allowed is 3 per cent of the cubic content. Besides this, the sealers are responsible for the stamping, and they are each fined 2 dollars for saw-logs, and 1 dollar for pulp-logs found not properly marked, or not marked at all. As often as possible, but at least once a week, the foreman has to send a report of the work and scale bills to his district office, from which reports go every fortnight to the head office and to the respective companies. Although at the start it met with resistance from jobbers, farmers, and old-fashioned companies, the sealing associations of to-day are very strong organizations and their work is appreciated by all.

Finally, the conditions for driving, as I mentioned when I started, are excellent. Not only the direction of the rivers, but also their deep narrow beds, make them well fitted for this purpose. The swiftness of the water is naturally different in different parts of the same river, but if I tell you that the speed of a log is about 75 miles a month, you will have a good average figure.

About the driving-buildings, you will find pictures of almost all kinds used in this little book, and if anything is not clear, I will be glad to explain it to you. Besides the drivers' buildings, good roads and telephone lines are being built more and more frequently along the rivers, and the money thus invested has proved to give a very good return. The funds for all these improvements are advanced by the Government. The interest is very low, and the time limit usually 20 years. "It is clear that the Government, before advancing money, must approve the estimate of costs and plans). Owing to this cheapness of money, considerable improvements can be made in order to save only one or two men.

The supervision of the driving is left to a driving company. This is a co-operative association which performs this work at cost and takes over all responsibility and risk from the lumber-owners.

Formerly each river had its own company, but now the aim is to get an entire river valley in "one" association with "one" chief. The main advantages of this system are cheaper administration and better control of the driving. It also prevents unfair distribution of labor and when driving in some particular spot has, stopped, for one reason or other, . . . it is possible to rush the gangs to wherever they are needed.

The territory controlled by the Driving-Chief is divided into districts. Each district is in charge of a district chief, who has the direct supervision of the work and is responsible for the employment of Foreman and laborers, paying of his men, etc.

The actual work of the drive is done by men in gangs of 10 to 30. Each gang has a foreman who is responsible for the driving in a certain part of the river.

The men are mostly paid by the hour and when the water gets low they often work 14-15 hours a day and sometimes even more.

As much of the work as possible is, however, done on the piece-work basis, especially for rolling logs, transportation over lakes, and driving in small creeks.

When a driving is made on piece-work, each gang contracts to do so much of the work and the company appoints a man who has to supervise the dams and also to see that each gang has sufficient men to carry out their contract.

In regard to the driving-costs the Government of Sweden is now putting into force a new law, according to which the costs are divided into seven parts, as follows:—

- 1.—River construction and improvement — dams, piers, booms.
- 2.—Maintenance and upkeep of No. 1.
- 3.—Operating expenses, exclusive of salary for Driving Chief.
- 4.—Sorting costs — including sorting booms and camps, and maintenance of same.
- 5.—Equipment—tools, boats.
- 6.—Administration costs.
- 7.—Special service for one company only.

To insure a fair distribution of the costs, the given parts are divided into two sections: No. 1 and 2 called "River costs" and 3, 4, 5, 6 and 7 called "Driving costs." The cost for each district is charged on logs hauled to that district and also on logs floated through from the districts above. Parts 1 and 2 are designed to assist in the better management of forests and the other costs are to allot properly the driving charges for different sized logs.

This is the law but how the costs 1 and 2 will be charged is hard to say. They have to be divided so that they bring about a better management of forests, I have thought, in this way.

Clearing and trimming will be possible only when it is profitable to sell the small dimensions. It is apparent that a system designed to help the forests must be based on a cost charged in proportion to the value. Thus the loss now sustained in driving logs of small dimensions (1 and 2 inches at the top) will be transferred to larger and more valuable timber where it may be borne without given hardship. In that way this system will give value to timber of all dimensions which means an increased growth of the forests and at the same time greater possibilities to keep the wood-laborer the year round.

The Driving-costs, which means item 3 to 7, have to be divided among the different dimensions according to the difficulty in driving.

Several investigations have been made to find out the proportion in driving difficulties between different dimensions and on the result obtained costing tables have been made.

The actual work is done in the same way in Canada and Sweden, and so is the sorting and construction of sorting-booms.

#### SWEDEN CURTAILS PAPER OUTPUT.

**German Competition Again in Evidence and Difficulty in Finding Suitable Markets is Experienced.**

Reports from London say that owing to the crisis in the paper industry many manufacturers at Gothenburg and in the west of Sweden generally have been obliged to restrict their output and dismiss a number of their employes. In a recent issue, *The Economist* of London printed the following:

The importance of these occurrences, however, must not be exaggerated. The general tone of the paper market is firm, though on account of temporary disturbances, such as the financial depression, sales at the moment are not brisk. For the next few years, however, the demand for paper will greatly exceed the supply. The United States alone absorbs its own entire output and that of Canada as well. It is true that German competition is once more becoming very noticeable, especially as regards the luxury branches of the trade, but the Swedish industry is not likely to be affected to any great extent by this, since it relies mainly on other specialties (wood pulp, cardboard, etc.) Another cause of the present apathy is the fact that considerable stocks of paper were accumulated in England during the boom last spring and summer, but these are not sufficient to satisfy the demand for any length of time. An early improvement in this essential branch of industry may therefore be anticipated.

The Swedish consul at Lausanne, M. von Rosen, contributes to "Svensk Export" (September, No. 666) an article dealing with the difficulties of finding suitable markets for Swedish paper in Switzerland and Italy.

The import of Swedish specialties, such as news print, grease-proof paper and sulphite, into these countries has greatly declined during the past year. The reason for this regrettable change is evident. News print, which was formerly imported into Switzerland in large quantities from Sweden, is now obtainable from Germany and Austria at about 1,000 francs per ton, whereas the Swedish export price could scarcely be less than 1,300 kroner per ton f.o.b. Swed-

ish grease-proof paper costs 1,700 to 1,900 kroner per ton f.o.b., while Germany and Austria can offer the same article at 1,850 to 1,950 francs free to the Swiss frontier. The price of Swedish cardboard is 1,600 kroner per ton, as against 1,500 francs free to Basel from Germany and Austria. Copying paper from Sweden costs at least 7 to 8 kroner per roll f.o.b., while the German article is offered at 8 francs free to the frontier. Various sorts of Swedish pasteboard costs from 75 to 90 kroner f.o.b., while the Swiss prices range from 65 francs upward.

The competition from Germany and Austria will, of course, increase in proportion as production in these countries assumes a normal character. In order to improve the Swedish export trade in this direction it is absolutely necessary to quote all offers in Swiss currency with delivery c.i.f. or free to the frontier, and to use the 30-day payment system. Under present conditions these methods certainly entail difficulties, which are not, however, insuperable, and the German exporters have succeeded in overcoming them. The latter, nevertheless, are still hampered by the fuel shortage, strikes, transport difficulties, etc., and Swedish merchants have many advantages in this respect which ought not to be neglected. It must be remembered that Switzerland is one of the new markets left to German paper merchants since the war, and special efforts are being made to retain it and enlarge the scope of the trade.

As regards Italy, much of the foregoing also applies. German and Austrian competition being felt here also. The Italian paper trade, however, is itself considerable, and the low rate of exchange renders import from Sweden very difficult. Printing paper costs in Italy 5.5 lire per kg., while the price of the Swedish article is 9 lire c.i.f. Genoa. Italian tissue paper costs 160 lire per 100 kg., the corresponding Swedish quality being quoted at 390 lire f.o.b. With regard to news print, imitation parchment, etc., conditions are similar. Such a difference in price tells its own tale, and moreover it has also been difficult to obtain the particular Swedish qualities required. The decline in this branch of the export trade must also be attributed in part to the general depression in the Swiss market.

#### ELEEMOSYNARY MEANS "NOT FOR GAIN."

If a laborer earns \$1,000.00 per annum in a city, he spends the same amount in caring for his family. 50,000 laborers at \$1,000.00 per annum means \$50,000,000.00 circulating in the channels of trade and commerce, and the banker, the butcher, baker, the candle stick maker, the insurance man, the preacher, the teacher, and every man not engaged in labor for wages, are dependent upon this circulation of money in order to ply their respective trades and professions. If by lack of systematic accident prevention, a community causes or contributes to the death of a wage earner, that community does not only lose the amount of his earnings, but the community as a whole goes into its pockets to provide housing, sustenance and education for the family of the man lost by accident. It seems perfectly logical to spend at least part of the moneys now used in keeping up of eleemosynary institutions, on systematic accident prevention in a community, and we should place safety education work upon the same plane as the work of the public health and other educational activities.

After all, you've got to give full, fair value. Or you won't last.—Forbes Magazine.

# Lubrication of Ball Bearing

Oils as well as greases may be used as lubricants for ball bearings.

If oil is used, the housing of the bearings should be filled about up to the center of the lowest ball.

If grease is used, the housing should be filled about one-half or three-quarters.

On account of the fact that lubricants, particularly greases, which are sold under trade names, show great variations in composition and quality, we recommend that lubricants for ball bearings be purchased according to specifications and not according to trade names only.

Following are a number of such specifications, which are designated A, B, C, etc.

## Specifications of Lubricants.

### A—Very Light Ball Bearing Oil

	Maximum
Free Acid . . . . .	.10%
Free Alkali . . . . .	.10%
Sulphur . . . . .	.03%
Ash . . . . .	trace
Resin . . . . .	none
Salt . . . . .	none
Heat Test (15 min. at flash point) darkening, but no sediment . . . . .	slight
Oil should be pure, mineral and have no tendency to gum or become sticky.	

	Minimum
Flash point (Cleveland Open Cup) . . . . .	300°F.
Fire Test . . . . .	350°F.
Viscosity (Saybolt) from 50 to 100 secs. at 100°F.	

**B—Light Ball Bearing Oil**  
Same as "A" except  
Viscosity (Saybolt) from 100 to 200 secs.

**C—Medium Ball Bearing Oil**  
Same as "A" except  
Viscosity . . . . . 200 to 500 secs.

**D—Heavy Ball Bearing Oil**  
Same as "A" except  
Viscosity . . . . . 300 to 500 secs.

**E—Extra Heavy Ball Bearing Oil**  
Same as "A" except  
Viscosity . . . . . 500 secs. or above

**F—Same as "B" except that in addition Pour Test . . . . . 5°F.**

	Maximum
Free Acid (calculated as Oleic Acid) . . . . .	.10%
Free Alkali (calculated as sodium hydroxide) . . . . .	.10%
Free Lime (calculated as Calc. Oxide) . . . . .	.10%
Sulphur . . . . .	.03%
Resin . . . . .	none
Salt . . . . .	none
Neutral Saponifiable Oil . . . . .	1.00%
Abrasive particles (sand, etc.) . . . . .	none
Melting point about . . . . .	180°F.

Grease should have no tendency to gum or become sticky. It should not contain graphite or fillers of any kind.

## Selection of Lubricants.

Referring to the above specifications we will gladly give our opinion in each specific case, but as a general guide, the following considerations may be useful.

1. For very high speed, say over 3000 r. p. m., use a light oil, such as A or B. If the surrounding temperature exceeds 150°F., oil C may be used.

2. For speeds from 600 to 3000 r. p. m., use oil B

or C. If the surrounding temperature exceeds 150°F., oil D may be used.

3—For speeds from 100 to 600 r. p. m., use oil C, or grease G, or if the surrounding temperature exceeds 150°F., oil D.

4—For speeds below 100 r. p. m., use oil D, or grease G, or if the surrounding temperature exceeds 150°F., oil E.

5—For temperatures below 32°F., use oil F.

Grease should be used when, on account of local conditions, it is difficult to keep oil in the bearing. It is not generally recommended where the speed exceeds, say 600 r. p. m., or where the surrounding temperature may attain 140°F., or above. Should grease appear desirable for speeds above, say 1500 r. p. m., we suggest that our engineering department be consulted.

The consistency of the grease to be used depends on the conditions of operation. We cannot specify the necessary consistencies in numerical values until a satisfactory testing method has been agreed upon by the trade.

**Note**—The above speeds, refer to bearings of an average size of 2" bore. If the actual size is greatly different, the speed of the bearing should be divided by two and multiplied by the actual shaft diameter. The speed so obtained should be used as a basis for the selection of lubricant.

## Application of Lubricants.

The renewal of the lubricant in a ball bearing depends to a great extent upon the operating conditions of the machinery. In the ordinary type of installation, operating under normal conditions, renewal should be made about three times a year, although close observation for a short time after installation will enable a better estimate to be made of the proper period of time.

When feasible, in cleaning the bearings, the old oil should be removed, the drain plugs then inserted and the housing filled with kerosene. The bearing should then be rotated for several minutes, so that each part of the bearing is brought under the cleansing influence of the kerosene. The drain plugs should then be removed and the housing carefully drained.

The drain plugs should again be inserted and the housing filled with a small supply of proper oil. The bearings should again be rotated for a few moments and then drained in order to be certain that the last traces of kerosene has been removed. After this second operation, the housing should be filled with the correct grade of oil to the proper level, and the bearing is ready for operation.

Care should be exercised to avoid putting too much grease into the housing, as this will result in its being forced out through the packing. In cleaning a bearing lubricated with grease, it is advisable to wash the parts thoroughly first in kerosene and then with some good light bodied oil. The bearing may then be re-assembled and packed with grease. In case the bearing contains a residue of soap that cannot be removed with kerosene alone, we advise the use of a hot mixture (not over 150°F.) of kerosene and denatured alcohol.—(From Bulletin 11 of the Canadian SKF Company, Ltd. Head office: 83 King Street West, Toronto. Eastern Sales Office: 412 West St. James Street, Montreal.

## DEARER NEWSPAPERS.

Over 650 increases in price of newspaper and periodical publications have been recorded by the Newspaper World this year.

# The Papermaking Qualities of Algerian Mallow

L. VIDAL and E. DOURON.

(Translated from *La Papeterie*, 41, 192-5, July 25, 1919, by A. Papineau-Couture.)

Algerian mallow (*Lavatera Cretica* L.) is a bi-annual plant which grows to a height of  $1\frac{1}{2}$  and even 2 meters, the stalks being stiff, rough, and about the thickness of a finger; the leaves are round, hairy, and whitish; the flowers are violet and closely resemble those of the common mallow. It is a weed that is found on waste lands and by the roadside in the whole of the region around the Mediterranean. It is found here and there in the South of France, but it is not very abundant there. It is found in much larger quantities in Algeria, Tunis, Morocco, and also in the East, as shown by the name *Lavatera Cretica* given to it by Linnaeus.

Such is the Algerian grass which Mr. Michony (16 Boulevard Lesueur, Oron) has suggested should be used for textiles and for papermaking.

The bark contains a large number of pericardic and liber fibers arranged in concentric layers. This arrangement is found in all the malvaceae and renders them all theoretically suitable for the desired purpose. From a practical standpoint, the species recommended by Mr. Michony deserves special attention because it is bulky, it grows abundantly in certain regions (including the province of Oran, for instance) and it could be harvested in sufficiently large quantities to warrant its being utilized. He also proposes using a closely related species, *Lavatera Mauritanica*, Durieu, which can be considered as being merely a variety which grows along the Algerian and Moroccan seaboard. For our purpose there is no appreciable difference between the two and three are no objections to their being mixed together.

The useful portions of the plant can be separated right in the field by means of a special retting process which is both simple and practical and requires but little water, a point of very great importance, in a country where water is scarce. There is thus obtained quite easily a raw and impure tow, which amounts to 10 per cent of the dry weight of the plant.

It is in this form that the Algerian settler could furnish it to the textile or paper mills. After a proper carding and weaving it can be made into cordage and burlap, while as a raw material for papermaking it could be used directly.

This raw material was submitted to the Department of Inventions, which entrusted the study of the technical aspect of the question to the French School of Paper making at Grenoble. The following is quoted from the report made to the Government in August 1918.

The tow obtained from the barks of Algerian mallow is essentially a jute substitute; it comes from a plant which is botanically closely related to that which furnishes jute, and it has the same appearance and the same microscopic characteristics as the latter. It is of a very light amber color, lighter than jute; it is shiny, but less so than jute; and, finally, it is also less lignified, and consequently more flexible and less brittle.

Under the microscope it is seen to consist of long, regular, rather slender, and coherent bundles of fibers. These fibers consist of lignocellulose, as shown by the golden yellow coloration which they give with iodine zinc chloride reagent; they also give a red coloration with phloroglucine in hydrochloric acid

solution. These properties are characteristic of jute and of all its substitutes.

The cellulose content, as determined Cross and Bevan's chlorination method, was 57 per cent.

To prepare it for papermaking, this material could be cooked, either very slightly so as to retain its strength, or else more thoroughly so as to obtain a bleachable pulp. We accomplished this on a laboratory scale by treating some material in an autoclave with 7 per cent of caustic soda (as a 4°Be liquor) under a pressure of 3 kilos (about 10 lbs. per sq. in. Translator) for  $4\frac{1}{2}$  hours. After beating and washing in a small experimental beater, we bleached hot with about 18 per cent of bleaching powder. The bleaching was rather difficult and by no means perfect. Hand sheets were prepared from both the bleached pulp and the unbleached pulp. The strength was quite satisfactory, especially that of the paper from the unbleached pulp.

The cellulose which we obtained was entirely resolved into its elementary fibers. With iodine zinc chloride reagent it gave a dirty brownish, violet coloration. It consists of long fibers, averaging 2 mm. in length, which are nearly cylindrical and have thick walls. The average diameter of the fibers is 0.020 mm. The ratio of the diameter to the length  $.020 : 2 = 0.01$ , is exactly the same as that of jute and indicates a high felting power. The strength, however, is slightly less than that of jute, for the fiber wall is not quite as thick, and the lumen has no constrictions like those which are so characteristic of jute.

The pulp is practically entirely fibrous and nearly pure, the cell fragments from the bark having been largely eliminated during cooking and being present in negligible amount.

Of the jute substitutes Decan or Ambari hemp (*Hibiscus Cannabinus* L.), the fibre of which is often known as brown hemp or Bombay hemp, most closely resembles the material which we studied. As found in commerce, it is a kind of jute which is lighter in color, less lignified, less brittle, softer, and more flexible than ordinary jute.

Our conclusion is that the tow prepared from Algerian mallow, as proposed by Mr. Michony, is a satisfactory raw material. If it can be obtained at a sufficiently low price it constitutes a valuable raw material. If, however, it is too expensive, it should first be utilized for textile purposes, and it may afterwards ultimately find its way into the paper mills in the form of waste or rags.

## MR. J. W. KILGOUR DEAD.

The death of John Wilson Kilgour, of Beauharnois, occurred last Thursday after a short illness. Mr. Kilgour was founder and the president of the Kilgour Bros. furniture factory at Beauharnois, one of the oldest concerns in its line in the country. He was 77 years of age. The late Mr. Kilgour also leaves one brother, Major Joseph Kilgour, president of the Canada Paper Company. Mr. Howard Wilson, of J. C. Wilson Ltd., of Montreal, is a nephew of the late Mr. Kilgour.

If you have half an hour to spare, don't spend it with someone who hasn't.—Forbes Magazine.

**PUTTING THE AXE TO ACCIDENTS.**

The directors of the Ontario Pulp and Paper Makers' Safety Association at a meeting held recently in Toronto passed resolutions inaugurating a unique competition among the employees of the pulp and paper mills of Ontario. The idea underlying the plan is the stimulation of interest of each individual employee in accident prevention. A competition such as outlined below will appeal strongly to the spring instincts of the individual, and this, combined with the spirit of "esprit de corps", should make the employees of each mill strive earnestly all through the year to top the list and secure the trophy for their mill. The shields and flags will be handsomely designed and well worth every ounce of effort put forth to secure the prize.

**Rules Governing Accident Prevention Contest.**

- Any mill located in the province of Ontario is eligible to compete.
- Mills to be divided into two groups—
  - Mills employing 200 people and up
  - All other mills.
- All accidents involving lost time of 1/2 day or more to be taken into consideration in making up records. Construction or woods operation accidents to be excluded, making the competition a straight contest between operating mills.
- Copies of Workmen's Compensation Board forms Nos. 5, 7 & 9 covering all accidents to be sent to A. P. Costigane, Sec. Ontario Pulp & Paper Makers' Safety Association, 129 Spadina Ave., Toronto, who will be responsible for compiling records.
- A monthly statement showing the total number of employees and total number of payroll hours to be sent to A. P. Costigane, Sec. Ontario Pulp & Paper Makers' Safety Association, 120 Spadina Ave., Toronto.
- Each competing mill will be put on its honor to report all accidents. Care should be taken to see that no accident is omitted.
- Statistics will be computed on man-hour basis.
- The trophy, which will remain the property of the Ontario Pulp & Paper Makers' Safety Association, to take the form of a shield mounted on a wooden base. The mill having the best accident record for any one year to be judged the winner for that year, and will have the custody of the shield, until won by some other mill. The mill holding the shield to be responsible for the safe keeping and condition of the shield.
- Each year the name of the winning mill, and the year of winning, will be inscribed on a tablet which will be permanently attached to the wooden base. A new tablet bearing the name of the winner to be attached to the base each year.
- Each winner of the shield will be presented with a commemoration flag bearing the name of the Association, the name of the winning mill and the year of winning. This flag becomes the property of the winner, and a new flag will be presented each year.
- A separate shield and flag will be offered to each of the two groups for competition.
- Shield and flag will be offered for competition each year for as long as deemed advisable by the directors of the Ontario Pulp & Paper Makers' Safety Association.
- In the event of any dispute as to the winner, the

decision of the directors of the Ontario Pulp & Paper Makers' Safety Association to be accepted by all competitors as final.

**A SUMMARY OF BELGIAN TRADE.**

Pulp and Paper Imports and Exports of Belgium in Metric Tons for the nine first months of 1920 as compared with the corresponding months of the previous year.

Origin Imports Destination. Exports.	Wood Pulp (Free)		Wall Paper (Duty)		News Print (Duty)		Boards (Duty)		Foldingma- ted paper-Duty.	
	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920
<b>Imports.</b>										
Canada		1164								20
Finland		3994							328	647
France		185	409	491	184	1	28	120	80	1399
Germany	406	486	45	268	19	190	3	686	422	4293
St. Britt				615	963		542	663	1760	2446
Norway		653						158	6	87
Holland	4010	1042	13	92	4482	3130	2333	1356	2415	2159
Denmark:								88	171	524
Norway	12846	29996						250	277	557
Sweden	10768	42853							61	75
Switzerland:			21			137		36	143	50
U.S. Amer.	209	454								341
Canada	970									7
Other: China:	13	156	60	3	409	239				7
Total:	32225	52875	1859	1469	8277	2697	3363	2619	6389	12665
Year Total	54978		1869		8136		4514		10326	
<b>Exports.</b>										
Argentina				72						6
Australia										186
Bel: Congo										17
Brazil										111
Brit: Ind:										2
Canada										343
China				49						84
Cuba										39
Denmark									57	21
Dutch Ind:										242
Egypt										155
France	195	11229	59	1067		170	13	204	120	6656
Germany	50	2200								126
St. Britt:				15		56		262	659	3543
Greece										190
Holland		456	22	130				54	49	1319
Ireland				7						194
Japan				42	4	15	50			48
Luxemb:										18
Norway										128
S. Africa										49
Siam		50		23						14
Switzerland:										54
Sweden										1
Switzerland:			26	83						34
Tunisia										250
Turkey										28
U.S. Amer:										3
U.S. Amer:										2
U.S. Amer:										87
U.S. Amer:										159
U.S. Amer:										89
U.S. Amer:										238
U.S. Amer:										14
Total:	48	11925	149	1657	16	401	13	517	1008	11931
Year Total	3445		529		99		52	517	2474	

Reconciliation (quantities in metric tons and value in francs.)

Year	Wood Pulp		Wall Paper		Newsprint		Boards		Foldingma- ted Paper		Total Qty. Value
	Qty. Value	Qty. Value	Qty. Value	Qty. Value	Qty. Value	Qty. Value	Qty. Value	Qty. Value			
<b>Imports.</b>											
1919	54978	87564	1869	5307	8136	2025	4514	8641	10326	18903	24857
9 first mths 1919	32225	19468	1509	4197	6379	5949	3762	3198	6586	11692	17557
9 first mths 1920	32225	19468	1471	6377	3699	4972	3631	1029	12670	32743	21672
<b>Exports.</b>											
1919	1443	1413	120	1967	99	150	52	61	3474	10299	4155
9 first mths 1919	45	204	170	439	15	19	13	6	1012	3988	1194
9 first mths 1920	1146	1543	147	71	472	117	619	206	14942	51668	17868

**ARC OF CONTACT.**

The number of degrees in the arc of contact on the smaller pulley in the open drive without idlers can be found by multiplying the difference between the diameters of the pulleys in inches by 4.75, dividing the product by the distance between pulleys in feet and subtracting the result from 180.

Example—Suppose that the pulley diameters are 10 and 36 inches and the distance between centres 12 feet,  
 $26 \times 4.75$

$180 - 122 = 169.71$  degrees.



# PULP AND PAPER NEWS

The latest development in the action brought by the Attorney-General of Ontario against Walter H. Russell and the Russell Timber Co., of Port Arthur, is the filing of two affidavits by Joseph Hoystead Milway, timber cruiser, and Byron Manly Wylie, Acting Crown Timber Agent at Port Arthur, who says that he was informed of the removal of 200 cords which he then placed in control of his agents.

After inspecting the work being done at Spruce Falls, Premier Drury, who has just returned to Toronto, expressed himself as well pleased with work that is being done there. Spruce Falls was formerly known as Kapuskasing. Twelve hundred men are at work there, the pulp mills are being rushed to completion and thousands of cords of pulpwood are being cut in the woods. It is expected that the first unit of the pulp mills will be completed by May of next year. Instead of cutting wood in small patches, the cutting is being done in one block. The brush will be burned and the area reforested.

Work on a fibre board plant, the first unit of which will cost a quarter of a million dollars, will be commenced in Midland, Ont., early in the spring, if the rate-payers of the town decide to give Manley Chew a fixed assessment of \$25,000 for ten years. Mason & Co., of Manchester, England, to whom Mr. Chew sold his sawmills and limits a few months ago, are applying for an extension of the fixed assessment of \$25,000 on their Midland purchases for eight years. Both applications will be voted on in January.

Premier Drury announced at a labor conference at the Parliament Buildings in Toronto that the Government proposed to proceed at once with the clearing of the pulpwood and trees on the right-of-way of the T. & N. O. Railway to a point 25 miles north of Cochrane. He intimated also that on the present line the bush along the side of the railway would probably be cleared up to prevent fire danger. The Premier said he would get reports within a few days as to the work.

In a counter claim filed at Osgoode Hall, Toronto, the Fort Frances Pulp and Paper Co. are claiming more than \$2,000,000 from many western papers. On July 17 last these papers issued a writ against the company and asked for a declaration that certain judgments or orders of the Paper Control Tribunal, dated Aug. 18th 1919 and July 8, 1920 be valid and binding on the Fort Frances Co., and to enforce the same, and for payment of all sums due to the newspapers by the company. The statement of claim reviews the history of the Orders-in-Council that fixed the price of newsprint, but the Fort Frances Company replies that the alleged orders of the Minister of Customs and R. A. Pringle, K.C., as commissioner are without force or validity, and that there is no authority or jurisdiction in the Minister or Commissioner to enforce the same, and that the Act of Parliament concerned is ultra vires. The counter-claim for more than \$2,000,000 for paper at uncontrolled prices was then made.

Attorney-General Raney has issued a writ against the Shevlin Clarke Lumber Co., Fort Frances, and sev-

eral other defendants from Minneapolis. The writ asks for a cancellation of the grants of timber berths 45 and 49 Quetico reserve made Aug. 28, 1919 and for cancellation of any licenses; for any money due and owing; for damage for conspiracy, fraud, deceit and

Mr. H. B. Donovan, sales manager of the Canada Paper Company has so far recovered from his late illness as to be able to spend a couple of hours daily at his office in Toronto. His many friends were pleased to greet him after a long term of absence at his home at Oakville.

Lieut. Col. T. Gibson, Toronto, Vice-Pres. of the Spanish River Pulp and Paper Mills, Limited, delivered an address before the Canadian Club of Fort William a few days ago on "Pulp and Paper."

conversion; damages for trespass and waste and for an accounting of all timber cut and moved in operations hitherto carried on in the district of Rainy River and Kenora.

A delegation of Northern Ontario farmers waited on the Ontario Government last week and among other things attacked the doing away entirely with the permit system of handling pulp and lumber. They maintained that they were not getting prices for pulpwood which those farmers just across the border were getting. They wanted a Government measurer of pulpwood and asked action by the Government to compel the improvement of vacant lands held by speculators. A Government enquiry into pulpwood prices was also asked for, the allegation being made that prices were being held down. The Government promised consideration of these and other matters mentioned by the deputation.

A large number of documents have been filed with the court at Osgoode Hall, Toronto, in an action brought by the Attorney-General of Ontario against the Great Lakes Paper Company asking for a declaration that the defendant company under an agreement, must use Hydro-Electric power, and an injunction restraining the company from obtaining its power elsewhere. The agreement was entered into by the Government with J. J. Carriek, who assigned all his rights and obligations to Messrs. Allsed and Seaman, of the Great Lakes Paper Company at Nipigon and Cameron Falls. The agreement concerns the power from Nipigon River. This power was needed for Port Arthur and Fort William industries and the Government agreed to supply Hydro power in its stead. The bone of contention is whether the defendant is obliged to stand by the agreement, or whether the agreement was purely an optional arrangement.

A large number of citizens in St. Catharines and vicinity and many representing the Canadian paper trade attended the funeral of the late W. D. Woodruff in that city last week. The offices of the Lincoln Paper Mills Company, in Toronto, were closed out of respect to the memory of the late president of the company and the staff were present at the funeral. Among those from Toronto, who attended the funeral, were Mr. L. P. Bouvier, of Bouvier & Hutchinson, Mr. Henry Balm, of Kilgour Bros., and Mr. T. H. McDermott, who has charge of the Toronto office.



## Technical Section



### REVIEW OF RECENT LITERATURE.

**L-6. Process for increasing the softness and flexibility of articles made from cellulose ethers.** Farbentfabr. F. BAYER & CO. German Patent 322,619, March 29, 1917. Diethyl resorcinoldicarbonate,  $C_6H_4(OOC_2C_2H_5)_2$ , boiling at 298-302 C., is used. Ethylecellulose can be worked with 50 per cent of its weight of this substance without crystallization occurring.—C. J. W.

**L-7. Production of artificial fibers from cellulose solutions.** K. SCHREINER. German Patent 322,538, Dec. 25, 1917. The method of producing fine threads by drawing out thick threads spun from wide orifices, is applied to cuprammonium cellulose solutions with the aid of slowly acting gaseous precipitants. After use the gases are passed into a well-cooled tubular vessel in which the moisture is deposited and the greater part of the ammonia is absorbed; after being moistened and reheated the gases are used again to extract ammonia from the threads.—C. J. W.

**P-0. The "man on the job" as a "Safety First" factor.** MIKE CORCORAN. Paper, 27, No. 6, 22-3, (Oct. 13, 1920). A description of the manner in which the "man on the job" can further "Safety" work and help cut down accidents.—A. P.-C.

**P-0. The Safety Director's part at the Kimberly-Clark Co.** Paper, 27, No. 7, 15-7, 30, (Oct. 20, 1920). A description of the methods adopted by the Safety Director of the Kimberly-Clark Co. is made a real success of "Safety" work.—A. P.-C.

**P-0. How the "Safety" game is played in the Kimberly mill.** Paper, 27, No. 3, 17, 40, (Sept. 22, 1920). A description of the methods used by the Employment Department of the Kimberly mill to increase safety and reduce accidents.—A. P.-C.

**P-0. The foreman's part in "Safety First" work.** HENRY W. BONGES. Paper 27, No. 5, 14-5, (Oct. 6, 1920). An explanation of the methods used by the foreman of the loading and unloading crew at the Kimberly mill to increase safety and reduce accidents.—A. P.-C.

**R-1. The pulp and paper industry in British Columbia.** LUKIN JOHNSTON. Paper, 27, No. 8, 18, (Oct. 27, 1920). A brief description of the resources of B. C., and of the advantages it offers to the establishment of pulp and paper mills.—A. P.-C.

**R-12. The production manager's need for cost accounting.** L. R. CLAPP, and D. S. DAVIS, THOMPSON & WORLEY. Paper, 27, No. 6, 13-5, 26, (Oct. 13, 1920). A discussion of the importance of a proper cost system and of the proper method of elaborating it.—A. P.-C.

**R-12. The value of cost finding in volume production.** G. V. WARE. Paper, 27, No. 7, 20-2, 32, (Oct. 20, 1920). A discussion of the importance of a cost system even for a plant where the process of production is simple and but few different products are turned out.—A. P.-C.

**R-13. Canadian Paper Trade Association Convention, Toronto, Oct. 6-7, 1920.** Paper, 27, No. 6, 9-10, 12, 25, 30 (Oct. 13, 1920). A brief account of the meeting, including text of the speech of retiring president John Martin.—A. P.-C.

### PATENTS.

**A-16. Unoxidizable alloy possessing high mechanical resistance.** Fr. patent No. 496,930. Société Anonyme de Commentry-Fourchambault et Decazeville, France, Aug. 22, 1920. *Chimie et Industrie*, 3, 634, (May 1920). An alloy to replace ferro-nickel where the Ni is subjected to the action of steam (e.g., in turbines) and contg., besides Fe, 25-40 per cent Ni, 10-15 per cent Cr, and eventually 0.5-1 per cent Mn, 0.3-1 per cent C, 0-10 per cent Co, 2-5 per cent W, 1-3 per cent Mo, 0.2-1 per cent V, 0.1-0.2 per cent Ti.—A. P.-C.

**A-16. Process for rendering iron and steel rustproof.** U.S. patent No. 1,311,319. R. D. COLFUHOUN, ceded to Parker Rust-Proof Co. of America. *Chimie et Industrie*, 3, 636, (May 1920). The objects are immersed in a bath contg. a compd. of P the concn. of which is kept const.—A. P.-C.

**A-16; M-0. Flux for soldering Aluminium.** U. S. patent No. 1,312,154. C. L. Bonstereel, Canada. *Chimie et Industrie*, 3, 636, (May 1920). A flux consisting of 265 parts  $AlCl_3$ , 820 parts  $ZnCl_2$ , 2 parts borax 25 parts S, 65 parts paraffin, and 25 parts tallow.—A. P.-C.

**A-16. Non-corroding alloy.** Fr. patent No. 496,928, Société Anonyme de Commentry-Fourchambault et Decazeville, France, Aug. 22, 1919. *Chimie et Industrie*, 3, 634, (May 1920). An alloy contg. 20-25 per cent Ni, 5-10 per cent Cr, 1-2 per cent Mn, 0.2-0.5 per cent C. The Ni imparts the properties of ferro-nickels. Cr prevents irreversible transformations of the alloy either at 200 deg. C. or when maintained for a long time in a damp atmosphere at a high temp. The mixture ensures that the Fe is in the  $\gamma$  state. The high Cr content gives it high acid-resisting power, concd.  $HNO_3$  dissolving only 0.0004 g. per 100 sq. cm. per hr. It is suitable for machines requiring a high mechanical strength.—A. P.-C.

**A-16. Unoxidizable and non-corroding metal.** Fr. patent No. 496,929, Société Anonyme de Commentry-Fourchambault et Decazeville, France, Aug. 22, 1920. *Chimie et Industrie*, 3, 634, (May 1920). An alloy composed of Ni 60-70 per cent, Cr 10-15 per cent, W 2-5 per cent, balance Fe.—and eventually Mn 1-2 per cent, C 0.3-0.6 per cent, Mo 1-3 per cent. This alloy forms a homogeneous solid solution, the properties of which are unaltered by thermal treatment.—A. P.-C.

**E-2. Acidification of distillery mashes with waste sulfite liquor.** Ger. patent No. 317,998, H. KASERER, Oct. 30, 1917. *J. Soc. Chem. Ind.*, 39, 421A, (1920). Waste sulfite liquor is employed for acidification and fermentation is conducted as usual.—A. P.-C.

**E-2. Acetone from waste sulfite liquor.** Fr. patent No. 195,099, West Virginia Pulp & Paper Co., U.S.A., June 17, 1919. *Chimie et Industrie*, 3, 654, (May 1920). The waste sulfite liquor is neutralized with  $CaO$ , and evapd to a concn. of 50 per cent. The  $CaO$  is eliminated by the addition of  $Na_2SO_4$ , and the concd. liquor is treated with 10-20 per cent. of its wt. of  $NaOH$  and 40-60 per cent. powdered  $CaO$ , which yields a solid mass contg. acetates, the formation of the latter being favored by heating for a while at 200-

250 deg. C. By dry distn. acetone and other volatile products are obtained.—A. P.-C.

**E-2. Dry distillation of concentrated waste pulp liquors.** Ger. patent No. 301,684, W. SCHACHT, Aug. 27, 1916. *J. Soc. Chem. Ind.*, **39**, 445A, (1920). Concd. waste pulp liquors are distilled in a current of an inert gas or steam or a mixture of both. The residue in the retort is then made alkaline and further distilled. From 100 pts. of waste liquor pitch (sp. gr. 1.5), 50 l. of an aqueous distillate containing  $\text{NH}_3$ , alcohols and oils was obtained. On the addition of alkali and further distillation there was obtained 2.4 kg. of oil of sp. gr. 0.930, which yielded about 25 per cent. of a good burning oil, sp. gr. 0.800-0.815, and various pyridine bases.—A. P.-C.

**E-2. Method of recovering cymene obtained in sulfite process.** U. S. patent No. 1,333,694, L. AKER-BLOM, Stockholm, March 16, 1920. *J. Soc. Chem. Ind.*, **39**, 361A, (1920). The gases from the digester are led into a receptacle containing acid for a subsequent digestion; the greater portion of this acid is then tapped off from the lower end of the receptacle and the remainder, together with the cymene floating on top of the liquor, is conducted into a second receptacle. The level of the liquid in the latter is then raised by introducing a liquid heavier than cymene, so that the cymene is forced up into the narrow portion of the receptacle from which it is drawn off.—A. P.-C.

**E-5. Method of indirect heating for sulfite cooking.** U. S. patent No. 1,337,704, R. H. HULT, April 20, 1920. *J. Soc. Chem. Ind.*, **39**, 445A, (1920). The liquid is first heated by means of heating elements, such as steam coils, which are connected in parallel, and the heating then continued by means of the same or other elements connected in series. For making sulfite pulp, the heating elements are connected in parallel until the temp. of the liquor has reached 100-105 deg. C., and then in series till the temp. reaches about 138 deg. C.—A. P.-C.

**F-2. Fertilizer from waste soda liquor.** Ger. patent No. 316,147, W. COLEMAN, Charlottenburg, Aug. 6, 1916. *J. Soc. Chem. Ind.*, **39**, 420A, (1920). The black liquor obtained in the treatment of straw with alkalis is mixed with agricultural waste products and exposed to the atmosphere, by which means a stable fertilizer is produced. The caustic liquors remaining in the original material, together with the wash-waters, can be utilized for irrigation purposes.—A. P.-C.

**F-2. Acetone from waste soda liquor.** Fr. patent No. 495,047, West Virginia Pulp Co., U.S.A., June 15, 1919. *Chimie & Industrie*, **3** 654, (May 1920). The waste soda liquor is evapd. to a concn. of 50 p.e., 10-20 p.e. NaOH and 40-50 p.e. powdered CaO are added, which favors the formation of acetates. The resulting product is subjected to dry distillation.—A. P.-C.

**F-2. Core-binder from spent soda liquor.** Ger. patent No. 311,294, K. S. FUCHS, Germany. *Chimie & Industrie*, **3**, 637, (May 1920). The silicates and org. compds. which can be destroyed by the action of acids are removed from the spent liquors obtained from the alkalin treatment of vegetable matter; after drying this can be used as moulding powder. The neutralized soln., rendered alkaline again if necessary, is concd. and used as a core-binder.—A. P.-C.

**F-5; K-3. Rotary digesters and like boilers.** Eng. patent No. 137,742, K. HELLNER, Falun, Sweden, May 28, 1919. *J. Soc. Chem. Ind.*, **39**, 264A, (1920). In rotary digesters for the manuf. of cellulose and the like the liquor is heated with indirect steam in order

to avoid dilution by condensed water. Heating elements are provided outside the digester in such a manner that they take part in its rotation and are connected with the inside of the digester in such a manner that the liquor can pass constantly through the heating elements and be heated by means of pipes located therein, the supply of steam being passed through one trunnion of the digester, while the condensed water is discharged through the other.—A. P.-C.

**G-5; L-5. Continuous washing and dehydration of cellulose and cellulose preparations.** Ger. patent No. 307,078, R. MÜLLER, March 2, 1918. *J. Soc. Chem. Ind.*, **39**, 400A, (1920). A rotary suction machine is combined with a device for the counter-current washing of the material with alcohol of progressively increasing strength. A pulp containing, a.g., 10 p.e. nitrocellulose can be treated by this method.—A. P.-C.

**K-2. Substitute for lubricating and drilling machine oil.** Ger. patent No. 316,028, K. S. FUCHS, Heppenheim, July 6, 1918. *J. Soc. Chem. Ind.*, **39**, 327A, (1920). The soln. of alkali salts of lignic acid obtained as waste liquor in the digestion of straw, maize-cob meal, etc., is pptd. by waste mineral acid or bisulfate; the gelatinous product is heated at 70-75 deg. C., and the lignic acid settles out. A 25 p.e. soln. of the Na salt of this product gives a brown oily liquid, which is used as such or after emulsification with a little oil.—A. P.-C.

**K-5. Manufacture of a spinning and weaving fiber from straw and similar stem and bast fibers.** Ger. patent No. 316,109, Geraer Jute-Spinnerei und Weberei A.-G., Triebes, May 14, 1918. *J. Soc. Chem. Ind.*, **39**, 330A, (1920). The raw material is boiled with a soln. of 4-15 p.e. of sulfides or polysulfides of alkalis or alkaline earths to which NaOH is added in the proportion of 1:4, until the pectin and lignin matters and the  $\text{SiO}_2$  are dissolved; the digested mass is then resolved into separate fibers by the force of hot or boiling water directed in the manner of a water-fall upon it, being at the same time washed free from sulfides. In order to avoid hardening during drying, the mass, immediately after the treatment with water, is further treated with dil. aqueous HCl, then thoroughly washed and dried.—A. P.-C.

**K-10, 18; L-7. Process for sizing and waterproofing paper, boards, and papertextiles.** Ger. patent No. 304,205, P. E. ALTMANN, Dresden-Tolkowitz, Aug. 2, 1917. *J. Soc. Chem. Ind.*, **39**, 361A, (1920). The material is impregnated with a mixture of saponified beeswax, water-sol. oils, and talc, and the sizing agent is fixed by means of alum soln.—A. P.-C.

**K-10. Manufacture of emulsions for sizing paper.** Ger. patent No. 316,345, G. MUTH, Nuremberg, June 27, 1916. *J. Soc. Chem. Ind.*, **39**, 361A, (1920). Commarone resin or a similar coal-tar resin, is emulsified with an aqueous soln. of a vegetable or animal glue or a similar colloid, and a soln. of an Al salt is added; casein may be employed as the colloid if it is first converted to the water-sol. form.—A. P.-C.

**K-18. Counter-board and process of making same.** U. S. patent No. 1,332,541, A. L. CLAPP, Marblehead, Mass., Assignor to the Metalite Co., Amesbury, Mass., March 2, 1920. *J. Soc. Chem. Ind.*, **39**, 361A, (1920). Fibrous cellulose is treated with alkali without the application of heat; the stock thus obtained is formed into sheets and the sheets are dried.—A. P.-C.



# UNITED STATES NOTES

Plans for the annual convention of the National Paper Box Manufacturers' Association, which will take place in New York City, May 11 and 12, 1912, were made at a recent meeting held in New York under the auspices of the Metropolitan Paper Box Manufacturers' Association. More than 300 makers of paper boxes, supplies, machinery, etc., attended, one of the men present representing the Pacific Coast manufacturers.

Announcement of the completion of their plant at Nitro, W. Va., has been made by the Nitro Pulp Mills. The company has taken over the cotton purification unit, built by the Federal Government for war purposes. "Present capacity of the plant is 50 tons of pulp daily," according to the announcement, "and the raw material from which the pulp is made is good, clean cotton linters. The men behind this company are all paper or pulp manufacturers or dealers, and it was from the paper manufacturers' point of view that we saw the possibilities in this new line of pulp for paper-making."

The Howard Pulp and Paper Company, Idaho Falls, Idaho, has plans under way for the erection of a power plant to generate 18,000 horse-power. Thos. L. Tomlines, Syracuse, N. Y., is engineer for the project.

Directors of the Union Bag and Paper Company have authorized the erection of a fund of \$1,200,000 for the purpose of maintaining dividends during 1921 at the present rate of \$8 a share annually on the \$15,000,000 stock outstanding. Statements attributed to the officials of this company are to the effect that the business outlook is such as to warrant the setting aside of a sum necessary to continue the present rate of dividends.

### Pulpwood from Russia for U. S.

In the course of an interview given in New York last week just prior to his departure for Los Angeles, Washington D. Vanderlip, agent of the syndicate of Westerners interested in Siberian concessions, promised the publishers of America that they need never fear shortage of print paper if one of his many schemes works out. "I want to develop a pulpwood trade between the Murmansk district of northern Russia and the eastern seaboard of the United States," said Mr. Vanderlip. "Northern Russia has many hundreds of thousands of square miles of pulpwood easy of access to the sea and to deep water harbors, which can be loaded into American vessels and carried to the paper factories of the eastern seaboard of the United States, these same vessels having carried to Russia cargoes of machinery and supplies purchased in the United States. This will prove a strong competition against Canadian pulpwood, now subject to high freights from Canada on the railroads. I have taken the matter up with one of the foremost publishers in the United States and he is very enthusiastic over the proposition. The traffic will be an all year round affair, as the Murmansk district is never icebound."

Chief Forester W. B. Greeley, in his annual report, says that the United States Forest Service is threatened with complete demoralization unless the salaries paid to employees are raised to more adequate proportions. Many resignations have taken place during the first year due to the meagre compensation, he says, causing public interests to suffer through the constant turnover of personnel. "No organization can perform miracles," states the report, "and the public forests of the United States cannot be effectively protected from fire, developed and administered to meet the tremendous demands being made upon them without a field force whose compensation is on a par with the work demanded." Pointing out that the Government and not the employee is the real sufferer, inasmuch as the well-trained and efficient employee can leave the service and obtain more remunerative positions, Col. Greeley urges that the rates of compensation now fixed by statute be revised so as to permit radical increases in the salaries paid. This, he believes, is the only way in which the situation can be effectively met.

The de-inking plant of the Economy Pulp Company at Tonawanda, N. Y., will be ready for operation about January 1. Of the six units, each de-inking 100 tons of paper a day, has been installed and placed in working order. The basis of this new enterprise is the de-inking process discovered by Rev. A. Sager of Buffalo. Ink is taken from newspapers and colored magazine paper, the paper being converted into white pulp.

### INTERNATIONAL MILL TO START SOON.

The new mill of International Paper Co., now in course of construction at Three Rivers, is expected to be in operation this month. Facilities for turning out sixty tons of sulphite pulp daily have been installed and operations are expected to show on this basis. The mill is not expected to be completed until late next year with an estimated capacity of 240 tons of newsprint daily.

### NEW DIRECTORY AND MARKET DATA BOOK.

Crain's Market Data Book and Directory of Class, Trade and Technical Papers, now on the press, promises to be of unusual interest to advertisers generally and users of trade and technical papers in particular. It not only lists of all the business publications of the United States and Canada, giving circulations, rates, type page sizes, closing dates, etc., but supplies market analysis of each trade, profession and industry. Thus the reader is given the basic facts of each line in which he may be interested, including its buying power, buying methods, character of requirements, etc. The volume, which is bound in cloth and contains nearly 500 pages, is published by G. D. Crain, Jr., 417 S. Dearborn street, Chicago. The price is \$5. Orders in advance of publication are being accepted at the rate of \$3.75.

## REVIEW OF RECENT LITERATURE.

(Continued from page 1307.)

**K-18. Plastic material practically incombustible, strong and possessing insulating properties.** U. S. patent No. 1,331,519, D. Motta, Assignor to E. RUGHI and A. VILLAIN, Genoa, Italy, Feb. 24, 1920. *J. Soc. Chem. Ind.*, **39**, 340A. (1920). A plastic and elastic insulating material is prepared from paper pulp without size and equal parts by vol. of  $\text{CaCO}_3$  and Mg silicate, the wt. of the combined carbonate and silicate being substantially the same as that of the paper pulp.—A.P.C.

**K-23. Safety paper.** Ger. patent No. 303,989, E. HAUSSMAN, Berlin, March 6, 1917. *J. Soc. Chem. Ind.*, **39**, 264A. (1920). A composite paper has a middle sheet uniformly colored with an easily reacting coloring matter, and on either side of this one or more covering films of a thin absorbent paper, only slightly colored, if at all. The coloring matters of the inner sheet is destroyed if the outer sheet is attached by chem. means, and the inner sheet is soon exposed to view by abrasion.—A.P.C.

**K-23. Apparatus for making ornamental paper.** U. S. patent No. 1,329,130 E. MAILER, Assignor to Kimberly Clark Co., Neenah, Wis., Jan. 27, 1920. *J. Soc. Chem. Ind.*, **39**, 264A. (1920). A fourdrinier wire is arranged to move in a straight line free from lateral shake while the paper is being formed on the wire, thereby causing the formation of elevations and depressions in the paper web. Liquid color is sprayed by means of a gas under press. on to the upper surface of the wet plastic web of paper moving with the wire, the spray impinging on the paper at an acute angle to the horizontal.—A. P. C.

**K-23. Paper for use as a dielectric for electrical condensers and other purposes.** Eng. patent No. 138,226, F. HAIGIL, Stoke-on-Trent, April 9, 1919. *J. Soc. Chem. Ind.*, **39**, 292A. (1920). Extremely thin tissue is coated with a homogeneous substance possessing good electrical insulating properties, such as pyroxylin, collodion, nitrocellulose, or cellulose acetate. The thin paper is supported by a backing of heavier paper, the 2 papers being pressed together in a moist condition during manu. The coating is then applied to the thin paper while in contact with the support, and the backing is removed before the paper is used. A P. C.

**L-5. Saccharification of cellulosic material with gaseous hydrochloric acid.** Ger. patent No. 304,399, Chem. Fabr. Rhenania A.-G., Aachen F. L. SCHMIDT and G. A. VORKELIUS, Stolberg, May 8, 1917. *J. Soc. Chem. Ind.*, **39** 311A. (1920). The material is first moistened with cold highly concd. (40 per cent. HCl) and then treated with gaseous HCl. Example: 400 kg. of sawdust is uniformly moistened with 400 l. of 40 per cent. HCl and, after steeping for a short time, the mass is satd. with the acid gas. The acid is allowed to act on the wood for about 6 hrs., and is then drawn off by suction. If the residual acid be neutralized with  $\text{CaO}$  or  $\text{NaOH}$  the product is directly avail. for use as a feeding material in which the whole of the cellulose of the wood is present in the form of sugar or dextrin. If it be desired to convert the dextrin into fermentable sugar the product of the reaction must be lixiviated and the solution heated for 2 hrs. at 120 deg. C.—A. P. C.

**L-5. Process for saccharifying plant material containing cellulose.** Ger. patent No. 305,690, C. G. SCHWALBE, Eberswalde, May 4, 1916. *J. Soc. Chem. Ind.*, **39**, 346A, (1920). The moist material, containing

less than 50 per cent.  $\text{H}_2\text{O}$ , is subjected to the action of a gaseous acid such as HCl, HF, or  $\text{SO}_2$ , until it is swollen but not dissolved, the heat produced being eliminated by cooling, if necessary below the ordinary temperature. The gaseous acid is then removed and the gelatinous material is saccharified by dil. acid under atmospheric or higher press. From 100 parts of dry wood substance it is possible to obtain 70 parts of sol. matter containing nearly the theoretical yield of destrose and pentoses.—A. P. C.

**L-5. Process and apparatus for producing fodder from wood.** Ger. patent No. 305,090, H. MÜHLENBEIN, Cothen, Nov. 18, 1916. *J. Soc. Chem. Ind.*, **39**, 346A, (1920). The wood passes continuously through a series of vessels in which it is comminuted, then subjected to known chem. treatment with alkali and with oxidizing agents such as Cl, and then separated from the liquid, mixed with other feeding-stuffs, dried and, if necessary, ground. The digesting app. consists of 2 or more vessels, capable of being heated, and fitted with stirring mechanism, perforated feed, inlet and screened outlet for the chem. agents, and a steam outlet hood. The process can be applied also to the preparation of cellulose for papermaking, and the digesting app. may be used in place of a diffusion battery in producing sugar juice and fodder slices from beets, and in similar cases.—A. P. C.

**L-5. Preparation of cellulose esters.** Ger. patent No. 299,181, E. WAGNER, Berlin, March 4, 1914. *J. Soc. Chem. Ind.*, **39**, 400A. (1920). Partially-acetylated cellulose obtained by the action of  $\text{AcOH}$  on cellulose is further acetylated by somewhat less than double its wt. of Acetic anhydride, whereby the insol. acetyl compls. are converted into higher acetylated products, which are directly sol. in the usual solvents, e. g., acetone. By this means a saving of acetic anhydride and of the catalyst, where such is employed, is effected. An example is given of the preparation of a cellulose acetate containing about 61 per cent.  $\text{AcOH}$ . A. P. C.

### TO FIND THE WEIGHT OF ANY NUMBER OF SHEETS OF PAPER.

A quick method of finding the weight of any number of sheets of paper, provided the ream weight is known, is as follows:

Put down the weight of one thousand sheets, (2 reams) multiply this by the number of sheets of which the weight is desired and then point off three places. This will give the exact weight in pounds and thousandths.

Example:

What will 345 sheets of 25 x 38—60-500 weigh?

Weight of one thousand sheets, 120 lbs. of one sheet, 0.120 lbs.

Number of sheets' weight is desired, 345 sheets,  $0.120 \times 345 = 41.400$ .

Therefore 345 sheets of 66 lb. paper will weigh 41 4-10 lbs.

When figuring on stock which weighs 50 pounds to a ream, simply put down the number of sheets of which the weight is desired and point off one place. This will give the weight in pounds and tenths.

Example:

What will 475 sheets of 25 x 38—50 weigh?

47.5 pounds.

This is explained by stating that if a ream of paper weighs 50 pounds, each sheet weighs one-tenth of a pound.—American Printer



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Dec. 18.—Christmas of 1920 finds a spirit of optimism pervading the Canadian paper industry generally although there is more or less uncertainty and speculation as to what the coming year is going to bring forth in respect to trade conditions. Leading authorities in pulp and paper circles admit their inability to pierce the veil that hides the future but are convinced that although the coming year may not see the unprecedented prosperity of the one just closing, the trade is going to remain healthy, if not extremely prosperous. This conviction is shared by manufacturer and jobber alike and while it is agreed that next year's prices will not retain their present level—and the opinion is prevalent that more normal prices all round would be better for the trade—the paper market is going to be well maintained and on a healthier basis. It is generally conceded that paper reached altogether too high a figure this year and that a fairly liberal trimming process could be carried on with advantage to the trade during the coming year. That lower prices will prevail next year is the conviction of most men in the trade but there is no indication of any very serious slump. Making due allowance for the optimism of the surveyors of advertising fields in Canada and the United States, who promise a bigger volume of business next year than ever before, it seems reasonable to assume that the demand for paper during 1921 is going to keep up and if there is going to be a market for the product the manufacturers are going to get a good price.

Glancing back over the year in the newsprint field it is interesting to note that mills opened the season with their product selling at three and a quarter and three and a half cents, while the year closes with the price nearly doubled and a six and a half cent rate adopted for the fore part of 1921. This this branch of the trade is in a healthy condition is indicated by the fact that late estimates give twenty-one as the number of new paper machines that will be in operation in Canada and the United States during the coming year. This will represent an increased output of about five per cent, but it will be fully a year before the influence of the added tonnage is felt, and then it will be absorbed by the normal increase in consumption. A large proportion of the newsprint equipment expansion will be in Canada. Price Bros., Ontario Paper Co., and Spanish River will each have one new machine. Laurentide two and Abitibi three, in addition to which the International Paper Co. are building a mill at Three Rivers where they propose to install four new machines with a capacity of 200 tons daily. At the beginning of 1920 Canadian newsprint mills had a total capacity of 2,775 tons per day and it is estimated that at the beginning of 1922 this capacity should be increased to 3,215 tons per day, according to present schedules, so that 1923 should see Canada's newsprint production over one million tons per year.

The past year has seen an unprecedented demand for all grades of fine papers and prices for these, especially book papers have more than doubled in price. As the year closes mills are getting from fifty to a hundred

per cent more for some lines of book paper than they got at the beginning of 1920 and there is still a big demand for book, bonds and ledgers despite the fact that the year closes with big stocks in the jobbing warehouses. These are there because of a temporary cessation of buying on the part of the printers, whose business has fallen off during the past month or so, and because the belief exists that the market is due for a fall of some sort. It is believed that these stocks will be reduced early in the new year as buying is bound to set in again either on the present price basis or a reduction as some predict. But in the meantime the development and expansion of the fine paper trade goes steadily on. Ranges of high-grade paper have been produced during the year which formerly found their way into Canada for Europe and the United States and domestic loft-dried and tub-sized papers have now taken the place of many imported lines. Canadian manufacturers are today turning out fine and superfine papers the quality of which was not surpassed by foreign makers. Expansion is still the watch-word and should the domestic demand fall off there is still the export market for Canadian manufacturers. The Provincial Paper Mills Co., Limited, with modern mills at Mille Roches, Thorold and Georgetown and operating a sulphite plant at Port Arthur, are considering the erection of a two-machine book mill at Port Arthur during the coming year which would bring onto the market about forty additional tons. The Howard Smith Paper Mills are carrying out improvements at their Cornwall plant which will bring production there up to fifty tons a day. A new machine is to be installed at the Crabtree Division of the company in Quebec, which will trim 82 inches and augment the output of that branch by fifteen tons per day of sulphite bond papers, most of which will be for export. During the present year a new 86-inch machine was installed at Beauharnois, Quebec, giving a capacity of over twenty tons a day. Improvements have been completed at the Kinleith Paper Co's mill at St. Catharines, which added some twelve dryers to its largest machine, increasing production by six tons a day and making the total daily output of the plant twenty-seven tons. The plants of the Rolland Paper Co. at St. Jerome and Mont Rolland, Quebec, which specialize in bond, ledger, linen and high grade writings, are also busy on improvements, calculated to add greatly to their output.

**RAW STOCK SITUATION.**—While there has been a falling off in the prices of pulp lately it is interesting to note that pulp is still selling at from \$50 to \$60 a ton higher than in January of the present year. There is no stable market in any of the lines of pulp but a representative of one of the leading pulp mills submits the following as the average market prices today: ground wood pulp \$95 to \$120, at the mill, according to demand; bleached sulphite \$175, easy bleaching from \$140 to \$150; news sulphite, \$130 to \$140. In regard to wood pulp, it should be stated that while lower prices are being offered for wood from the jobbers, who get their supplies from the farmers, the big end of the cut by the paper mills will be made by the middle of January at greatly enhanced cost over that



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of last year, wages alone having increased from \$60, \$65 to \$80, \$85, F.o.b. prices for pulpwood started out from \$16 to \$18 per cord at the first of the season and they kept soaring until the remarkable price of \$26 was reached or was offered. An eastern representative informs the Pulp and Paper Magazine that the bottom has fallen out of the pulp wood market and no one is buying today. It would appear as certain that the market for some little time was a purely artificial one. Ordinarily, wood from New Brunswick was consigned to the Maine and New York mills and much to the surprise of the mills in that province, a heavy demand sprang up from the Ontario and Quebec mills, owing to the shortage there. Buyers from these latter mills swept over the province offering almost any price for spot wood. The result was that people with whom the New Brunswick dealers had contracted insisted on having their contracts raised, with the result that the season has been somewhat upset. Very little spot wood has been, or can be, delivered for the reason that little of this season's peeling can be obtained and delivered at the railways until the arrival of a liberal quantity of snow. A comparatively small quantity of pulp wood has been obtained by the Ontario and Quebec mills up to date but it is anticipated that a shipment will be free this winter under contract. As a result of the prevailing high prices quite a number of the larger operators installed rossing machines. The drop drove some them out of business, but quite a number are going ahead under advantageous contracts made before the drop.

#### NEW YORK MARKETS.

New York, December 18 — (Special Correspondence) — The paper market continues devoid of feature activity in the jobbing trade and at the mill centres is of narrow compass, and buyers are holding off to as great extent as in the recent past. In fact, demand for most kinds of paper is still receding, if anything, thus reflecting the gradual drawing near of the year-end and the holiday season. Mills in various parts of the country are devoting their major attention at the moment to compiling inventory and to making much-needed repairs to machinery, and while busy with these things, seem satisfied to let matters stand as they are and the market to follow its own course without any interference on their part. If the prevailing dullness was at any other period of the year the probabilities are manufacturers would exert more effort toward reviving interest among buyers or toward drumming up business in some fashion, but with such important

matters as inventory and repairs occupying their time and attention it is not surprising that the average paper producer is pursuing a policy of aloofness.

Reports coming to hand this week from the Middle West are to the effect that the market there has not slowed up to quite the degree that is apparent in this section of the country. It is stated on good authority that practically every paper mill in the West is operating, most of them on a materially reduced schedule, but nevertheless running at least two or three days a week. One reason for this probably is that a majority of the book paper plants in the States are situated in some part of the West, and it is this branch of the industry that seems to have been the least affected by the dullness of the past several months. Prior to the slackening of demand for paper, it was generally conceded that book paper manufacturers had sufficient contract business on their files to keep them operating at close to full capacity until the end of the year. Some of these orders doubtless have been cancelled, but indications are that the average book paper mill held on to enough of the business they had contracted for to give them work for fully half the time, and this possibly accounts for the present condition of the industry in the West being more favorable than in the East.

There is little in the way of important market changes to report. Jobbers as a rule are desirous of liquidating their stocks and are placing orders with mills only when actually needing paper to fill customers' wants. Consumers also are still buying in hand-to-mouth style, with the exception of large publishers who are looking far enough ahead to make contracts covering future deliveries of news print or book papers. The printing trade in and around New York is marked by dullness and this class of paper buyers are confining their purchasing operations solely to supplies directly required.

Newsprint continues to sell for spot delivery in rolls at an average of 7.50 cents per pound at mills. Occasional transactions down to 7 cents are reported but they do not involve important tonnage, and for large quantities of newsprint, publishers invariably find it necessary to pay better than 7.50 cents.

Book papers are quoted at a basis of between 12 and 13 cents a pound for machine finished book for prompt shipment, while the contract basis is maintained at 9.50 to 10 cents at mills. A representative of a leading paper mill in the West states that publishers of some of the most widely circulated periodicals have increased their tonnage for book papers commencing with next February delivery 35 per cent. above the amount of

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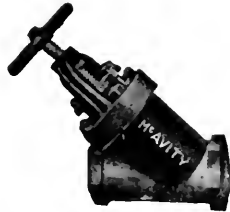
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paper ordered at the same time in 1920. This would indicate that the consumption of book paper in the magazine field in 1921 will exceed that of the current year, when all records have been surpassed.

Fine papers seem to be holding their own both in point of market activity and in price. Printers are buying carefully and yet a fairly large movement into consuming channels is noted. Quotations on some of the low grades of writing papers have been reduced further but fine lines are firmly quoted and mills are generally declining to accept orders except at the figures named.

Wrappings and tissues are in about the same quotable position and are lacking new feature. Business in this class of paper is only moderate. Boards rule dull although it can be said that demand has improved a bit over that of several weeks ago. With prices down to what would appear rock-bottom levels, box-makers and other buyers are absorbing supplies with less reluctance and the market promises to broaden during the next few weeks. Prices hold at around \$45 per ton at mills for plain chip and \$50 for news board.

**GROUND WOOD.**—There is little business of an important character current in mechanical wood pulp. Paper manufacturers are keeping much out of view as buyers, this being the season of the year when they invariably hold off in purchasing raw material excepting when in immediate want of it, and aside from contract business, practically no trading is reported. Prices are easy although no further sharp declines have been noted. Domestic ground wood of prime quality is quoted at \$100 or a shade lower at grinding mills for spot shipment, and foreign ground wood is held by importers for \$80 to \$90 per ton on the dock depending on the quality and tonnage wanted by buyers.

**CHEMICAL PULP.**—The market for chemical wood pulp is in a dull condition. There is a pronounced lack of demand from consuming quarters, paper manufacturers with few exceptions running almost entirely on stored stocks of pulp and the supplies coming in on contract, and actual sales are so few and far between that it is next to impossible to ascertain what market values really are. There is no question, however, that prices are lower. Perhaps the prices heard mentioned in the trade are not representative of the true value of pulp, but the fact remains that nearly every kind of chemical pulp is available in at least some tonnage at considerably lower prices than have lately prevailed. Foreign bleached sulphite is quoted down to 9.50 cents a pound on the dock here, while domestic bleached sulphite of No. 1 quality can be bought at 8 cents at mills and probably for less. Foreign easy bleaching is offered in some quarters at 7.50 cents, domestic easy bleach at 6.75 cents, foreign unbleached sulphite of No. 1 grade at 7 cents and domestic news grade sulphite at 5.75 cents. Kraft is quoted down to 5 cents per pound at mills for domestic and at a quarter to half cent higher for Scandinavian pulp. These prices are in a sense nominal, as very little business is doing at any figures, and as the probabilities are purchases could be effected at still lower levels.

**RAGS.** Quietness marks current trading in paper-making rags and the few buyers operating are occasioned little difficulty in securing supplies at close to any prices they offer. New cuttings have begun to follow the downward line in old rags, and sales of the former at substantial reductions in price have been recorded. No. 1 white shirt cuttings having been purchased by mills at 7 cents, and old book cuttings, mostly ragged, at

7 cents, white lawns at 18 cents, new blue overall cuttings at 10 cents and new light silesias at 11 cents. Felt mills are keeping mostly out of the market and the scattering of sales recorded are generally in the neighborhood of a cent a pound at shipping points for No. 1 roofing rags. Old whites have steadied somewhat and are quoted at a basis of around 10 cents for No. 1 repacked of special quality and at a cent per pound less for average packing.

**PAPER STOCK.**—The waste paper market is still in the doldrums. There is but a light demand emanating from mills, and prices are characterized by easiness. Quotations mean but little under prevailing circumstances, because consumers, when actually in want of stock, can invariably buy at figures a good deal under those asked by dealers, this being an outcome of the dull demand and the anxiety of packers, to move accumulations. Heavy books and magazines have sold this week to mills down to 1.40 cents per pound at shipping points, folded newspapers at 70 cents a hundred, pounds, No. 1 mixed paper at 35 cents per hundred, and old No. 1 manilas at 1.20 cents. Shavings are the one class of old paper which show a steady tendency. Dealers evidently are holding shavings with a view of obtaining higher prices later on and quotations range at around 7.50 cents per pound at shipping points for No. 1 hard white and 6.50 cents for No. 1 soft white shavings.

**OLD ROPE AND BAGGING.**—Demand for both old rope and bagging is practically at a standstill and prices are in a shortly nominal position. Old Manila rope of No. 1 quality is quoted by dealers at 4.50 to 5 cents a pound, but the probabilities are purchases can be made at lower figures. Similarly, No. 1 scrap bagging is placed by shippers at 1.75 to 2 cents and yet buyers could doubtless get orders accepted at less. So few mills are testing the market that it is extremely difficult to determine what values are.

#### PAPER MILL WORKERS TO GO ON SALARY BASIS.

Employees of the Crocker-McElwain and Chemical Paper Manufacturing Companies, of Holyoke, Mass., who have had five years' service with the concern to their credit, are to be offered individual contracts shortly, according to the announcement of R. F. McElwain. The employees will be asked he said; to do nothing to conflict with the present open shop plan on which the two plants are operated.

#### HOW THE PRINTER STARTS.

The first thing the printer does when he starts to figure an estimate or put your work in hand—is to take a slip of paper and put some figures down. They look something like this: "17 x 22" or "22 x 34" or "25 x 38."

The first two are standard letter sizes, the last a standard book paper size. Then he divides these by the size of your work, and finds how many letterheads or folders or pages he can get "out" of a sheet.

Here's where you lose money or save it, because if you insist on a wasteful size, which leaves a lot of blank paper which cannot be used, this loss must go down against you as your cost. It doesn't take many thousand copies, where there is wastage, to run into a fairly large "dollars and cents" item.

Call in your printer early, when planning your requirements. He will help you and show you.—The

**ABOUT OUR ADVERTISERS.****The Felt Makers at Arnprior.**

In connection with the growth of the manufacture of papermaker's felt in Arnprior it is pointed out that the undertaking opens up a field that has possibilities in direct ratio to those of the great pulp and paper industry. The industry was established there by Messrs. Huyek, of Albany, N.Y., and its activities have been steady since its inauguration. Felt for clothing papermaking machinery has to a large extent been imported, until British and American interests decided to get into the Canadian field to serve the needs of the papermaking industry with a domestic-manufactured product. Other woollen products such as hosiery, blankets, motor rugs, etc., are also manufactured by Kenwood Mills, of Huyek Bros, in Arnprior. The American industry was commenced in 1870 in a small way and has expanded several times. The Arnprior plant has 60,000 square feet of floor space and is fitted with modern equipment for the manufacture of the various woollen products.

The Sandoz Chemical Works, of Basle, Switzerland, now offer Victoria Blue B through their Canadian Distributors, McArthur, Irwin, Limited.

**Hughes Owens Company Limited Add New Department.**

The Hughes Owens Company, Limited, with head office at 247 Notre Dame St. W., Montreal, and branches at Toronto, Winnipeg and Ottawa, announces that in addition to their well-known lines—Engineering and Draughting Instruments and Supplies, Blue and Black Print Papers, they have added a new department consisting of Microscopes, Microtomes, Chemicals, Chemical Glassware and Chemical, Bacteriological, Projection and Photo-Micrographic Apparatus, etc. In all these lines they represent leading manufacturers.

They also announce the appointment of Mr. J. O. Jarrell as General Manager of the Company and the addition of Mr. Peter Lennox to their Sales Force.

Mr. Jarrell has been in this country for a number of years, and is quite familiar with the requirements of the Canadian laboratories. Previous to coming to Canada, he was a member of the Sales Department of the Bausch and Lomb Optical Company of Rochester, New York, supervising their Canadian trade. He consequently brings to the organization a broad experience in handling the highest grade scientific apparatus.

Mr. Lennox, formerly of St. Andrews University, Scotland, and for a number of years Assistant in the Chemical Laboratories of McGill University, is, by reason of this experience quite familiar with a wide range of chemical processes and has a thorough knowledge of the equipment required by the modern laboratory.

Anyone in the pulp and paper industry may have, from time to time, interesting literature sent them by forwarding their name and address to the Hughes Owens Company, Limited.

The book and writing paper section of the Canadian Paper Trade Association held an enjoyable luncheon at the Ontario Club in Toronto on Tuesday of last week. A good representation of the section was present and enjoyed a pleasant social hour.

**LUMBER AND PULP EXPORTS TO U.S. FROM ST. JOHN.**

Henry S. Culver, American Consul here has given out a statement of exports of lumber and products to the United States for the quarter ended September 30th, 1920 from this consular district as follows:

Laths .....	\$112,142.25
Lumber .....	648,414.97
Pine Boards .....	16,597.17
Pulp Wood .....	94,114.90
Shingles .....	9,464.90
Spruce Piling .....	12,096.20
Wood Pulp .....	478,925.61
Total .....	\$1,371,756.00

**THE BOLSHEVISTS OF 1838.**

Daniel Webster in a speech, made eighty-two years ago, said: "There are persons who constantly clamor. They complain of oppression, speculation and the pernicious influence of accumulated wealth. They cry out loudly against all banks and corporations, and all means by which small capitals become united in order to produce important and beneficial results. They carry out mad hostility against all established institutions. They would choke the fountain of industry and dry all streams. In a country of unbounded liberty they clamor against oppression. In a country of perfect equality they would move heaven and earth against privilege and monopoly. In a country where property is more evenly divided than anywhere else they rend the air shouting agrarian doctrines. In a country where the wages of labor are high beyond parallel, they would teach the laborer that he is but an oppressed slave."

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# Pulp and Paper Magazine

OF CANADA

*A Weekly Magazine Devoted to the Science and Practice of the Pulp and Paper Manufacturing Industry with an Up-to-date Review of Conditions in the Allied Trades*

VOL. XVIII.

GARDENVALE, P. Que., December 30th, 1920.

No. 53

## TABLE OF CONTENTS

### Editorial.

Happy New Year! Why not? .....	1317
The way to get it .....	1318
"Brompton News" .....	1318

### Special Articles.

The performance of a culled acre .....	1319
The outlook of the paper market .....	1325
A national forest policy for the United States .....	1329

### Miscellaneous Information.

Forest fires—and an educational patrol .....	1323
A restless tribe .....	1323
Handling a breast roll .....	1324
Safety First .....	1324
Why close the timber industries .....	1328
Review of recent literature .....	1334
"Fool-proof" belt shifters .....	1335
The world's first industry .....	1335

Never mind the clock .....	1336
The labor question .....	1340
Hand made paper .....	1342

### News of the Industry.

Wall-paper making in England .....	1330
British trade news .....	1331
Forestry legislation committee at work .....	1332
Pulp and paper news .....	1333
Importance of woods end recognized .....	1333
Paper from wood pulp made in England in 1801 .....	1335
United States notes .....	1336
Train loads of wood from Cochrane country .....	1342
Our advertisers' column: The Koegel grinder .....	1342

### The Markets.

Canadian trade conditions .....	1337
New York markets .....	1338

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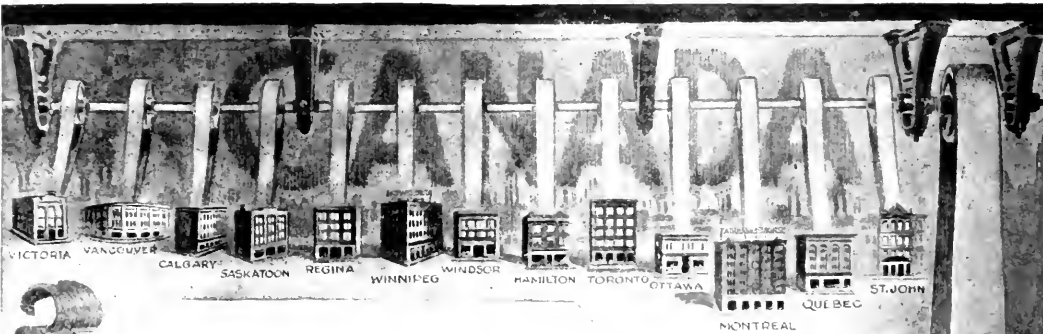
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J. NEWELL STEPHENSON, M.S., Editor

The editor cordially invites readers to submit articles of practical interest which, on publication, will be paid for. Subscription to any address in Canada, United States and British Empire, \$5.00 yearly. Other Countries Postage Extra. Single copies 15 cents.

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## EDITORIAL

### *HAPPY NEW YEAR! WHY NOT?*

We want to join the chorus of Happy New Years which is being heard on every hand this week. Everybody should be greeted and should extend the cheerful greeting and in spite of the passing of a cloud now and then across the horizon, there is every reason to believe that the coming year will be a prosperous one and consequently bring an opportunity for happiness to all of us. Happiness, as someone humorously defined Boston, is largely a state of mind. Contentment is similar. A contented person is likely to be happy. A person who endeavors to stir up strife at this time is making someone unhappy and is sowing seeds of discontent which not only makes it difficult for peace and happiness to come but makes it also difficult to acquire that degree of prosperity which is such an important element in making a Happy New Year come true. There are reasons enough for discontent and for worry in ordinary times. Just now we are passing through what industrial prophets look upon as the most difficult phase in a period of readjustment. How well we are able to pass through depends very largely on our individual attitude. Everyone realizes that complete recovery from the distressing situations that have recently faced this country along with the rest of the world requires courageous cooperation and that each one is best serving himself by remembering that there are others.

The paper industry for the most part is fortunately well employed and while orders are not crowding each other for space, on the books, there is more or less business in every line. The manufacturer or dealer who thinks he can grab it all and tries to do so is not acting with the Happy New Year spirit. He is entitled to his share of the business and profit and his employees are entitled to their share of the available work; but there are others. The business of the winter months this year is a bit slower than usual. Part of this condition may be only apparent because present conditions are being compared with the abnormally busy times through which we have just passed. It seems to us that present conditions might continue for some time before bringing down the average below what might be considered normal. The thing to do is to shorten the period of comparative inactivity as much as possible and be prepared for the revival of prosperity that is sure to come in the New Year.

Statistics are not always reliable and prophecies do not always "pan out" but the keenest observers among men who have seen many years of business perceive unmistakable signs that the coming year need not be approached with apprehension. Some people are looking for lower prices but if people who are standing still expecting lower prices to come to them would get busy and produce goods at a reasonable price, there would be sufficient employment and wage distribution to keep things going at a normal rate. There is considerable unemployment and, like pneumonia, it is likely to get worse before it gets better. Widespread distress could, however, be prevented by keeping things moving along. The cost of unemployment invariably falls on the whole community; it must be paid for and our humble opinion is that it is far better to pay for it with production than with charity. Unfortunately the winter months are those in which it is most difficult to carry on the class of work which falls principally on unskilled labor to perform. Someone has said that education is the cure-all for unemployment. This is not so. The best trained man is out of work if there is nothing for him to do and there are many tasks that require more muscle than brains. Ditches must be dug and materials moved. Education will not create such work. It may make it more difficult to find men who are willing to do such tasks, but the problem now is to find or create tasks for the man who is willing to do such work when it must be done and can be done. Our winters make it necessary to close down many outdoor operations and we have not yet become sufficiently enlightened to develop a workmanlike scheme for perennial employment. It may be true as we have heard a manager state, that many unskilled workers will not continue at certain tasks which become disagreeable when the snow flies. Some concerns are sufficiently efficient and broad-minded to plan on having work that can be done in the winter time by unskilled labor since skilled men for the most part work on tasks which are naturally good the year round.

The great problem before us then, if we are to make our Happy New Year to mean something, is to keep our chests out and our eyes front, not so straight front however, that we cannot take notice of the fellow beside us and give the assistance and encouragement which, if generally passed about, will make 1921 a Happy New Year indeed.

### THE WAY TO GET IT.

In a recent issue of the Pulp and Paper Magazine it was our pleasure to publish and comment upon plans for a Safety competition among the pulp and paper mills of Ontario. Such a competition is a good deal like a garden. The amount of production and satisfaction depends principally upon the amount of effort that one puts into it. Like a garden also the success of safety work depends largely on the kind of seed and the manner of its planting. With safety work the seed is the Safety Idea. There are a good many safety schemes but all of them do not fit every situation. A lecture on elevator guards, for instance, would not only be useless in a mill where no elevator is used but the inappropriateness of mentioning such a subject would really be a handicap to real safety work. On the other hand, no mill and no individual is so nearly perfect that no improvement is possible. Improvement is really the object of the Safety First competition for the shields and banners offered by the Ontario Pulp and Paper Makers Safety Association. The idea of a tangible prize, a shield or a banner, which signifies successful effort is to some people a greater inducement than even the benefits derived from the competition. Many a person points with pride to trophies won in school days without any thought of the benefits from the health and strength and good fellowship gained in the training before the contest. Even the loser has these benefits.

Practically the same benefits from training and contest are available in the case of the competition for the Safety shields. Suggestions for improvement of operating conditions and appeals to workmen to be thoughtful have greater force with some prize in sight.

Enthusiasm is one of the principal features of a good contest, no money can buy it nor can anything else take its place. It is therefore very gratifying to read the following letter from a paper mill in Ontario regarding the safety competition. If all the mills in Ontario will take up the proposition in this enthusiastic manner there will not only be happiness and satisfaction to the winners of the shields but there will be an enormously reduced loss of time and wages besides greater contentment and better health because Safety First has been the principal thought in the minds of the paper makers in Ontario. We hope the secretary will receive a letter like the following from every other member of the association.

The Ontario Pulp & Paper Makers'

Safety Association,

Toronto, Ontario

Dear Sirs,

We were very much interested in your letter of Dec. 16th in connection with the competition between all the mills for the best accident record during the year 1921.

Our Superintendent and the writer have been discussing this splendid idea with the foremen in our mill and we are one and all looking forward to securing the 1921 Shield for our Company.

We note the particulars which you require each month and you may rest assured that we will see that you are given this information promptly and accurately.

We are having several copies of your letter made out which we intend to distribute throughout our different departments.

Yours faithfully,

"Safety First Paper Company."

---

### "BROMPTON NEWS".

Strange as it may sound at first, Brompton Pulp and Paper Company has joined the publishers. We have just received the Christmas number of "Brompton News", the bi-lingual semi-monthly paper published by the company. There are eight pages of news. In expressing through its columns, his personal greetings, Mr. J. A. Bothwell, the General Manager reminds the Bromptonites that East Angus has a town and mill equal to anything in Europe and that everybody's co-operation is necessary to pass safely the difficult period we are now in.

---

### COBWEBS.

The Editor has been surprised and delighted to know he has so many good friends. Their Christmas greetings have brought great pleasure and encouragement. Cards, calendars, letters, diaries and cigars, all have brought the good wishes of friends, whom we wish to thank most heartily for their kind remembrances. Dorothy, representing Capital Wire Cloth Co., smiles at us from across the office; Gottesman's diary, the calendars from Sadler and Haworth, Watrous Engine Works Co., National Safety Council, Ontario Pulp and Paper Makers Safety Association, and others, help pass the time. So, in the best of spirits, we wish everybody as happy a New Year as ours seems likely to be.

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In discussing the likelihood of making rubberized "cloth" by impregnating paper, a friend in the rubber business said it was more likely that rubber would displace paper at the present trend in relative prices.

---

From reports of what some people in the United States think of the tariff bill that would make Canadian grain a scarce article across the line, there are evidently two sides of the question. The Boston Globe, for instance, cites the situation as an indication of the beginning of a period of log rolling in Washington—not in the Bureau of Forestry, however.

---

"A careful man does not need to tell you he is sorry," says the Safety League.



# The Performance of a Culled Acre\*

By C. D. HOWE, Dean of the Faculty of Forestry,  
University of Toronto.

In connection with the forest regeneration and growth study surveys of cut-over pulpwood lands being carried on by the Commission of Conservation in Ontario, Quebec and New Brunswick, several methods for determining the rate of growth of spruce and balsam have been employed. One of these is the selection of representative areas in a given forest type and condition in respect to culling and the making of a complete growth analysis of the balsam and spruce trees to be found on the plot. The first season of the work, the summer of 1917, five such plots were made and it is one consisting of an acre, a chain wide and 10 chains long, that I wish to bring to your attention this morning. It was situated in what may be called the mixed slope type where the stand of trees 4 inches and above in diameter was 40 per cent balsam and 40 per cent yellow birch, 11 per cent spruce, 6 per cent sugar maple, and 3 per cent white birch.

## The Pine Is Gone Forever.

The date of the first logging operations in the vicinity of this particular sample acre is apparently not known. It is known, however, that tote roads connecting the lakes had already been made in 1854, or at least 65 years ago. One finds trees about 35 years old growing on mounds of decayed wood, once the walls of camp buildings. The length of time required to bring camp buildings to such a stage of decay that trees could grow on them is doubtless a variable period, depending upon the kind of logs used, the situation, and the amount of rainfall. Since, however, the first camps were made of pine logs, we probably would not be far wrong in placing the time required as between 20 and 30 years.

As you know, the top of old pine stumps in course of time may become covered with moss, and such moist material makes a good germinating bed for tree seeds. One frequently finds trees 20 to 30 years old growing on such situations. I recall cutting a little spruce tree, 33 years old, from the top of a pine stump adjacent to the sample acre which I am about to describe. It had germinated on the sapwood and its roots originally pushed their way down to the soil between wood and bark. The tree must have been cut for a considerable length of time, and decay have been well advanced before conditions would have allowed this performance. The fact that the first log had been taken away indicates that the tree was very sound when cut, for as you know, not many defective logs were taken out of the bush in the early days of lumbering.

Old camp sites, old rollways along the lake shore now support young, even-aged stands of poplar, birch, cherry and maple from 40 to 50 years old. Coppice growth from stumps of hardwood trees, apparently cut for camp fuel, indicate activities of a half century past.

These evidences, among others, demonstrate with fair accuracy that the region was logged over for pine between 50 and 60 years ago. Data of a similar nature indicate another cutting around 40 years ago. Practically all the region has been cut twice and some of

it three times since, and at these subsequent cuttings the pine of any value was taken.

During a summer's study, in the locality we ran strips from the lake shore to the top of the ridges and measured among other things the white pine stumps on 60 acres and they averaged 6 to the acre.

The sample acre to which I wish now to draw your attention had 5 white pine stumps upon it, so it was fairly representative in that respect. These stumps, with their sapwood already gone and heartwood in various stages of decay measured 18, 19, 20 and 22 inches in diameter. The height of these trees is not entirely a matter of conjecture, for some of them in falling broke a channel through the crown cover and the corridor thus made in the forest is now filled with balsam poles and saplings. The top logs of other trees still remain where they fell. The measurement of these conditions indicates that the trees were from 100 to 125 feet high. Five average white pine trees even, with the diameters given above and averaging, let us say, 90 feet high, in fairly sound condition, would yield around 2,000 board feet. If we assume that each pine stump has lost only three inches in diameter in the 40 to 60 years that it has been subject to the forces of decay, with the height remaining the same, our estimate of the yield of the trees becomes increased by a third and reaches 2,600 board feet. Let us say the sample acre produced 2,500 feet of white pine lumber, at least as measured by the present market standards.

The sample acre at the present time contains no white pines—neither seedlings, saplings nor poles,—and in this respect, it is fairly representative of the locality. The forest capital stock represented by white pine has reached the vanishing point. An acre which has produced 2,500 feet of good white pine lumber will produce no more.

## Spruce Capital Insufficient.

So much for the pine, now let us turn to the condition of the spruce on the sample acre. The area was cut over twice for spruce somewhere around 26 years and 16 years ago. It was logged again about 8 years ago, but at that time the product was balsam instead of spruce. The older spruce cutting took six trees from the acre, and the dimensions of their stumps after 26 years of weathering and decay are 14, 16, 18 (2 stumps), 20 and 22 inches. The second cutting took 16 spruce trees from the acre and the present diameters of the stumps remaining are 8, 10, 11 (3 stumps), 12 (2 stumps), 13, (2 stumps), 14 (2 stumps), 15, 16 (2 stumps), 19 and 22 inches respectively. Thus, 22 spruce trees were removed from the acre and this is practically the average number taken from the areas cut twice for spruce, the average in our summer's work being 21.8.

We have a volume based on 110 spruce trees, all taken within five miles of the sample acre and in the same site. Using this as a standard, we find that the six trees cut about 26 years ago yielded at least 2.75 cords, and that the sixteen trees cut on the acre about 16 years ago yielded 3.75 cords, a total of 6.5 cords. It is a significant fact that in the earlier logging operation it took only a small fraction over two trees to make

\*A paper read before a meeting of the Woodlands Section of the Canadian Pulp and Paper Association, Toronto, December 8, 1920.

a cord, while in the later cutting a little more than four trees were required.

Nine balsam trees were removed from the sample acre about 8 years ago. During the summer's work in the vicinity only 7 acres cut between 5 and 10 years ago were encountered. I mean there were only 7 acres of plots and strips. The average number of balsam stumps on these was 7. So, again, we see that the sample acre was fairly representative in this respect. The balsam trees removed were 10 (2 trees), 12, 13 (3 trees), 14 (2 trees), and 15 inches in diameter.

Applying a volume table to these trees for their respective diameters, the yield becomes 2.5 cords of pulpwood. If we add this to the 6.5 cords of spruce, we find the acre has produced 9 cords of pulpwood in addition to the 2,500 board feet of white pine.

We have seen what is the present condition of the white pine on our sample acre, let us now turn to the spruce. Eight years after the last logging operation the area supported 17 spruce trees 6 inches and above in diameter. Their diameter classes were distributed as follows: 4 trees 6 inches in diameter, 3 each in the 7 and 8 inch class, 5 trees were 9 inches and 2 were 10 inches at breast height.

Only one of the trees was suppressed; four were partially dominated by larger trees, although they received plenty of side light. The other 12 trees had no overhead interference. The youngest 6-inch tree was 97 years old and the average age was 113 years. It took them 12 years to add an inch to their diameter. The two 7-inch trees were growing at the rate of one inch in diameter in 14 years and were 104 years old. It required 16 years for the 8-inch trees to add an inch to their diameter and their average age was 113 years. The five trees 9 inches in diameter had been in the forest for 150 years and it took them on the average 15 years to pass from the 8-inch class to the 9 inch diameter class. The greatest spread in age was shown by the 10-inch trees, one being 116 and the other 200 years old. The younger made its last inch in 10 years, while the older occupied 30 years in the accomplishment.

The volume of the 17 spruce trees from 6 inches to 10 inches in diameter inclusive was 120 cubic feet or 1.3 cords with the use of 90 as a converting factor. We have seen that 6.5 cords were removed by the two cuttings and now 16 years after the last logging operation only a cord and a third remain. If these 17 spruce had not yielded their lives to the investigative spirit and had grown at the same rate for the next 20 years as they did in the past 20 years, there would have been, with no allowance for normal fatalities, another cord on the acre for they have increased in volume at the rate of one cord in 20 years.

Using 8 as a converting factor, we find the average annual accretion in board feet for the past 20 years to be 38. If this rate were continued, it would have been a matter of 26 years before the present growing stock on our sample acre could have produced another 1,000 feet of spruce lumber—again with no allowance for death rate.

This may be expressed in another way by saying that the spruce 6 inches and above in diameter is growing at the rate of 4 per cent annually. This sounds well, but it requires thought. The term growth per cent has little managerial or financial significance unless accompanied by a statement of the amount of capital on which it is based. The spruce capital on the acre we are describing, even 16 years after the last cutting, is

only 1.3 cords, and, although this capital stock is making 4 per cent a year, the amount is so small that 36 years from the date of the cutting would elapse before the interest and capital combined would reach 2.5 cords of spruce per acre—and once more this calculation makes no allowance for normal death rate.

The normal death rate and the abnormal caused by unrestricted fire—unfortunately so frequent and regular in occurrence in some of our best forested regions as to be almost normal—present a very serious problem in any attempt to predict the future yield of our forests. Our good friend Barnjum is doing excellent work in repeatedly calling our attention to it. About the only way it can be accurately determined is by actual observation on selected areas through a series of years, and that the Commission of Conservation and the Entomological Branch are doing on their permanent sample plots.

There were no dead or dying spruce trees 6 inches and above in diameter on the sample acre under discussion, although one 8-inch tree and one 7-inch tree were afflicted with heart rot at the butt. The foliage and the crown development, however, did not indicate sickness. It may be pointed out, however, that the death of one 7-inch tree on our sample acre each year would offset the annual growth of the spruce.

The next crop of spruce on the sample acre would depend on the 17 trees whose probabilities in that respect have just been set forth. As indicated, this crop would probably not reach proportions profitable to harvest until 36 years or more had elapsed subsequent to the last spruce cutting. The forester, since he is in the employ of the state or other long-lived organizations and since his business is to keep an area continuously productive in terms of merchantable material must look still farther ahead than 36 years, so let us now turn to the consideration of the spruce trees less than 6 inches in diameter as disclosed by the study of the sample acre.

The acre revealed 63 spruce trees belonging to the 1-inch diameter class. All but six of these were growing beneath the shade of larger trees or, in other words, only six had the probability of unrestricted height growth before them. These six averaged 6 feet high and 25 years old, while the 57 shaded saplings were 5 feet high and 37 years old on the average. The youngest 1-inch tree was 21 years and the oldest 60 years old.

Thirty-one trees were found to belong to the 2-inch diameter class. Of these, 24 were beneath other trees and 7 in the open. The latter were 39 years and the former 47 years old. The youngest tree was 20 and the oldest 90 years old. The trees in the open averaged 11 feet high and those in the shade 9 feet in height.

The number of trees drops to 12 in the 3-inch diameter class, 6 free and 6 suppressed. The former were 40 years and the latter 58 years old. The average height in the two situations was practically the same, namely 12 feet. There were only 4 trees in the 4-inch class and 2 of these were badly suppressed. The five-inch class contained 2 trees.

Our studies indicate that a tree which has been suppressed up to 3 inches in diameter will not recover when released by the removal of the overhead crown cover. It has been discouraged so long that it does not respond to the improved conditions. If this is the case the potential trees of another crop in this group, beginning with the 1-inch diameter class, are 63, 31, 12, 2, 2. If these figures represent the normal death rate in passing from one diameter class to another, the

outlook for another crop from this group is not very encouraging. For example, if one half the 1-inch trees die by the time the 2-inch diameter class is reached, and, if only one half the former 2-inch trees are represented in the 3-inch class and if there are only 2 trees per acre 4 and 5 inches in diameter respectively, it is quite evident that the proper distribution of diameter classes is lacking. It will be 70 to 100 years before the trees now 3, 4 and 5 inches in diameter will attain 12 inches in diameter and each tree represented must live that length of time in order to replace the crop.

That sentence is somewhat involved. What I mean is this, when the 17 trees now 6 inches and above in diameter are harvested there are only 16 trees in the next group to take their places, and it is not at all probable that each tree will survive, for, if they grow as their predecessors have grown, the time of their harvest is still 75 to 100 years hence.

The evidence outlined above indicates that in the natural course of events the spruce could never have attained its former productiveness on the sample acre and probably would not have produced sufficient material to make a cutting for spruce alone profitable.

#### What About the Balsam ?

Now, if you will bear with me a few minutes longer, I will present the case of the balsam on the sample acre. We have found that 9 trees, yielding 2.5 cords, were removed from the area about 8 years ago. Eight years after the cutting the area supported 36 balsam trees 6 inches and above in diameter. The diameter classes were represented as follows: 14 trees 6 inches in diameter, 15 trees 7 inches in diameter, 3 each in the 8 and 9-inch classes and 1 10-inch tree. Only two trees were suppressed. Four were partially shaded, but received abundant side light. The other 30 trees were dominant.

The youngest 6 inch balsam was 42 years and the oldest 98 years old. The average age of the 13 trees was 67 years. The fastest diameter increment was an inch in 11 years and the slowest an inch in 20 years, the average for the 13 trees being an inch in 14 years.

The youngest 7 inch balsam was the same age as the youngest 6 inch tree, namely 42 years and the oldest was 111 years of age. The average for the 14 trees was 72 years. One tree in this diameter class, although having no overhead interference, required 30 years to complete its last inch. The average for the 14 trees was 1 inch in 12 years.

With one exception, the 8 and 9-inch trees were practically of the same age, 60 years, and younger than the average of either of the 6 or 7-inch class. Their diameter increment was 1 inch in 11 years.

The 10-inch balsam did the best of all. Only 6 trees out of the 36 were younger. It was only 50 years old and thus grew at the rate of one inch in 5 years.

The total contents of the 36 balsam trees 6 inches and above in diameter that remained on the sample acre 8 years after the last cutting was 167 cubic feet. This, with 90 as a converting factor, becomes one and four-fifths cords. They were increasing in volume at the rate of about 10.4 cubic feet per year. This means about one cord in 11 years. Expressed in square measure, it becomes about 83 board feet per acre per year.

Any estimate of yield in board feet of balsam, however, would be misleading, since the greater portion of the trees die before they get to be sawlog size. The same also should be said with regard to any prediction

of yield of balsam for pulpwood. Let me call your attention to the sudden dropping off in the stand table in passing from the 7-inch to 8-inch diameter class. There were 14 trees in the former and only 3 in the latter. This is undoubtedly due to disease and consequent windthrow. Six of the 13 trees 6 inches in diameter were affected by heart rot, 3 of the 14 7-inch trees, one of the 3 8-inch trees and one of the 3 9-inch trees was similarly afflicted. This makes 25 per cent of the trees 6 inches in diameter and above on the area affected by heart rot. How long it takes the heart rot in combination with accompanying insect diseases to kill a balsam tree is not definitely known. The Commission of Conservation and the Entomological Branch are trying to determine this on their permanent sample plots.

This sample acre is not unusual with regard to the sudden dropping off of numbers in the higher diameter classes of balsam. As stated above, the summer's work in the vicinity of this area involved the counting of trees on 60 acres of plots and strips. The average acre derived from these contained 59 balsam trees from 4 inches to 8 inches in diameter. The acre, on which the growth studies described above were made, contained 54 trees within those diameter limits. The average acre from the summer's work contained 6 trees from 8 inches to 12 inches in diameter. Our sample acre contained 7 trees within those diameter limits. Thus, it will be seen that it is fairly representative of the region with respect to the disappearance of the larger diameter class of balsam.

If, however, the trees were not diseased and if they repeated the growth performance of the past 20 years, they would yield practically 3.5 cords of balsam pulpwood on the acre 16 years hence or 24 years after the last cutting.

Taking up now the balsam trees between 1 inch and 6 inches in diameter on the sample acre, we find them distributed as follows: 142 trees in the 1-inch class, 70 trees 2 inches in diameter, 53 trees in the 3-inch class, 20 each in the 4-inch and 5-inch classes. The 1-inch trees were about equally divided with reference to the exposure to the light, one-half in the light, one-half in the shade. The youngest 1-inch tree was 12 years and the oldest 62 years old. The average age of those in the light was 23 years and of those in the shade 33 years old. The shade by the hardwoods held them back 10 years in age, but only 6 inches in height on the average.

Apparently one-half of the trees died in passing from 1 inch to 2 inches in diameter and 41 of the 70 2-inch trees were very badly suppressed, being 47 years old compared with the 31 years of those growing without overhead interference. By the time the 3-inch class is reached, the number was reduced to 53, of which more than one-half are badly suppressed. The suppressed trees averaged 57 years and the free trees 34 years of age. One-half the 4-inch trees were also nearly crowded to the wall by the overtopping hardwoods.

If we assume that the suppressed trees will not get through under normal conditions, and, since the death rate is so high in the 1-inch class, that only the dominants 2 inches and over in diameter, will participate in forming the larger diameter classes, then only 48 trees 2 to 5 inches inclusive in diameter can be depended upon to replace, when cut, the 34 trees 6 inches and above in diameter. This might be a sufficient number if their disease liability were not too high. We have

not sufficient data at present to predict what that would be.

#### Extent and Kind of Reproduction.

It is interesting to look still farther into the future of our sample acre than we have already done and to this end make inquiry into the extent of the reproduction. The area has undergone at least four cuttings. Now, what influence have these and the accompanying logging operations had upon the reproduction of the spruce and balsam? In partial answer to the question I may say that we found 528 spruce seedlings on the acre. We called all the trees seedlings which were less than one-half inch in diameter at breast height. Some of these seedlings were 60 years and none of them less than 20 years old. I would not say positively that no spruce trees younger than this occurred on the acre, but we did not find them in counting the trees on 10 square rod plots. The evidence indicates, then, that there has been no reproduction of the spruce since the last two cuttings, which occurred about 16 years and 8 years ago respectively.

Now, let us turn to the older cuttings and see what effect they may have had on the reproduction of spruce on the area. I have assumed that the date of the 26 years old cutting may not be accurate within several years on each side, so I have taken the spruce trees between 30 and 26 years and 26 and 20 years, a 10-year period, and I find 11 spruce trees with ages falling within that period. There were 129 trees 1-inch in diameter and above on the acre and only 18 or about 13 per cent became established as a result of the 26 year old cutting. It would perhaps be fairer to state this relationship for the trees now 4 inches and less in diameter and with that we find that among the smaller diameter classes, the trees between 20 and 30 years old form 18 per cent of the stand. It is evident, therefore, that the cutting of 26 years ago did not materially accelerate the reproduction of the spruce. The spruce trees, 1 inch to 4 inches inclusive, 30 years to 40 years old, make up 28 per cent of the stand; 40 to 50 years old, 16 per cent, and those 50 to 60 years in age, 18 per cent.

Let us state the case again. Reckoning back from 1917, we find practically no reproduction of spruce in the first two decades. In the third, fifth and sixth decades the reproduction was practically uniform, but something happened in the fourth decade, namely between 30 and 40 years ago, which stimulated the reproduction of the spruce.

I think this may have been due to a pine cutting or, perhaps, to the first spruce cutting. At that time there was undoubtedly less hardwood undergrowth beneath the forest and the layer of leaf litter may not have been so thick as now. The removal of large pine trees or spruce trees may have opened up the crown cover to a greater extent than the later cuttings of smaller and more narrow crowned trees. There was a better germinating bed than later and more light, conditions favorable for the reproduction of the spruce. The present reproduction in the vicinity is to be found in two apparently diverse situations, on thin soiled ridges and rock outcrops and on flats with deep soil. Apparently moisture content of the soil cannot be the determining factor, for the one situation is dry and the other damp.

We will now give attention to the reproduction of the balsam. The acre contained 3,500 seedlings. Compare that number with the 528 spruce seedlings. We de-

termined the ages of 350, one-tenth the number on the acre. Grouped in 2-year periods, we found that 95 per cent of them, running from 8 to 18 years, did not vary more than 10 years in age. Twenty-five per cent were 12 years old. Fifteen per cent each were 8 and 10 years old, and the 14, 16 and 18 year old comprised about 13 per cent each.

No particular influence of the 8-year-old and 16-year-old cuttings is evident here unless the peak at 12 years is due to the lagging behind effect of the 16-year-old cutting.

Taking the next older groups, as we did in the case of the spruce, we find there were 275 balsam trees on the acre from 1-inch to 4 inches in diameter inclusive. The ages of these trees are quite uniformly distributed in all the 10-year groups except in the decade between 30 and 40 years ago, where one-third of them are located. Whatever happened in that period stimulated the reproduction of the balsam as well as that of the spruce. There is probably little doubt that the reproduction of balsam as a whole has been accelerated by the logging operations, but there seems to be no direct stimulation by them, except perhaps in the case of one of the earliest cuttings.

It should be borne in mind in connection with the last statement that the acre supported a mixed forest in which originally at least a third and perhaps one-half of the crown cover was composed of hardwoods, mostly yellow birch. There is little doubt that a fuller removal of the crown does accelerate the reproduction of balsam in certain situations.

Thus with regard to the seedlings we have found that the balsam outnumbered the spruce by more than 6 to 1. In the diameters from 1 inch to 4 inches inclusive the balsam surpasses the spruce by nearly 3 to 1. In the 5-inch to 8-inch class the balsam exceeds the spruce in number by 4 to 1. We thus find the balsam abundant and aggressively pushing on towards dominance, a goal it probably will never reach because of inherent constitutional weakness in its ready susceptibility to disease.

#### Conclusion.

Gentlemen, we have entered into a detailed analysis of the conditions, the life history as it were, of an area, in order to present to you in terms of growth and reproduction the performance of a certain culled acre. Now, in conclusion let us briefly restate this performance:

First, the production of at least 2,500 feet of white pine lumber from five trees, all originally larger than 20 inches in diameter and the failure of white pine to reproduce itself, since not even a seedling can now be found on the area.

Second, the production of at least 6.5 cords of spruce pulpwood in two cuttings and the probable failure over in repeating this performance due to the depletion of the growing stock as the result of the logging operations, the absence of a proper gradation of diameter classes among the smaller trees, and the absence of adequate reproduction under the present forest conditions. To this also should be added the influence of the over-shading hardwoods in reducing the potential capital stock by suppressing and stopping down the growth rate among the smaller diameter classes.

Third, the production of 2.5 cords of balsam pulpwood and the accretion of a still larger crop of 3.5 cords in 24 years after the cutting. This statement must always be followed by the qualification that no

one knows the rapidity with which the diseases attacking balsam advance and hence there can be no dependence upon the future in respect to this species.

Now, gentlemen, I am sure that you will agree with me in saying that considering the treatment this acre has received, it has done quite well. Its chief lack has been intelligent direction and it is not responsible for that. With such direction I believe it could be recuperated and made even to surpass its past performance. Since this acre fairly represents the conditions in a certain locality, I believe recuperative methods could be applied on a large scale. You know better than I that the cost of getting wood to the mill is increasing each year, due not entirely to increased cost of labor and supplies, but also to increased distances of transportation. The cost of labor and materials, even the unit cost of transportation, may and very likely will decrease, but you know, again better than I, that the distance of transportation for your wood will increase in the future, unless you use substitutes for spruce or unless you pick up your mills and carry them far to the northward—and even then you may be disappointed in the quantity of readily available supply. The increasing distance of transportation will keep up the cost of production, and the time will soon come, if it has not already arrived, when it will be profitable for you to apply intelligence in directing the growing power and the reproductive power now aimlessly expressing itself on the much culled pulpwood lands that lie relatively near your mills.

Much could be accomplished by the utilisation of the hardwoods. Present prices already permit this in certain localities and owing to the untiring efforts of one of your members the use of hardwoods especially yellow birch, in considerable amount for groundwood pulp is a probable development of the near future. The commercial possibilities of poplar and paper birch are also developing.

The experiments of the Commission of Conservation already indicate that the removal of the hardwoods stimulates the development of the young spruce and balsam beneath. The 63 spruce trees and the 142 balsam trees 1 inch in diameter, not to mention the 500 spruce seedlings and the 3,500 balsam seedlings on our representative acre, form a potential commercial stand, if the conditions at present checking their growth were removed and they were allowed the freedom to carry on normal development.

The companies you represent have employed the highest order of intelligence to increase to quantity and quality of the mill production. As you know, this effort has been very profitable. All this time the source of the raw material has been neglected. I believe the time has come when it would be profitable for your companies to employ intelligence in the production of the raw materials.

### RESTLESS TRIBE.

A soul from earth, seeking admittance into Heaven, was questioned as follows:—

St. Peter.—Tell me of all the good deeds you performed while on earth.

Soul (after a long silence).—I cannot remember doing any good deeds.

St. Peter.—What was your occupation on earth?

Soul.—I was a lumber-jack.

St. Peter.—Come on in. You won't stay more than a day or two, anyway.

### FOREST FIRES—AND OUR EDUCATIONAL PATROL.

Those who have followed the widespread program of educational work carried on by the Canadian Forestry Association, will be interested in the news received as to the Forestry Exhibition Car with a Lecture Car attached, which are now touring in Central Quebec. The work of the cars will be concluded in December, as weather conditions make a winter itinerary practically impossible. It is hoped to start the 1921 tours both in Eastern Canada and the Prairie Provinces in the month of May.

Berthier Junction, P. Q.—The car attended by over 300 in the afternoon; 200 students from the Academy attended lecture and motion picture demonstration. A second lecture to one hundred children was given immediately afterwards.

In the evening the exhibition car was visited by about 500 people; two meetings being held in the lecture car with crowded audiences. Dr. Jervais, M.P., attended one of the lectures and gave a short address to the audience.

Three Rivers, Que. Owing to the excellent co-operation of Mr. Henry Sorgius, Manager of the St. Maurice Forest Protective Association, large audiences were encountered.

During the first afternoon 700 people visited the exhibition car. Mr. Valin assisted by Mr. A. H. Cooh, held a meeting of 400 pupils and teachers at LaSalle Academy. In the evening 500 people visited the exhibition car and two motion picture talks were held in the lecture car.

On the second day at Three Rivers 500 people visited the exhibition car and a forestry lecture with motion pictures was given to 500 students, and professors at the Seminary. The meeting was honored by the presence of M. Le Superior, who addressed the audience after M. Valin's speech.

Evening lectures were given at 7.00 P.M. and 8.30 P.M. to 300 people and over 250 persons passed through the exhibition car at the same hours.

Shawinigan Falls.—Four lectures were given during the afternoon to relays of students from local schools and academies. The total attendance at the four lectures was 700. During the evening approximately 1,000 persons visited the two cars. On the following morning a special meeting was given to 100 pupils and teachers from the Brothers School.

At Grand Mere.—In the afternoon, a motion picture lecture was given at the English School by Mr. Black, while Mr. Valin addressed some 600 pupils at the Brothers' School. In the evening a French lecture was attended by 300 people and this was followed by an English address to another audience. The attendance at the exhibition car was large, more than 1,100 people passing through. On Saturday morning, November 20th, at Grand Mere, 600 students visited the exhibition car; during the day another 800 people were present to see the exhibits and attend forestry protection lectures.

At Grand Piles.—The attendance at both the exhibition car and the motion picture lectures in French was one of the heaviest yet recorded.

Other points to be covered at the time of writing are St. Tite, St. Thecle, La Tuque, Flamaud, Windigo, Vandry, Parent, Greening, Joliette and Lachute.

**HANDLING A BREAST ROLL.**

Following is a letter from the Pusey & Jones Co. as printed in the "Super Calender" in answer to an inquiry.

Almost all breast roll handling devices are provided by the mills themselves, in accordance with the particular notions or the experience of the one in charge. We have, however, furnished on a few paper machines a device for handling the breast roll in and out of the wire, when such breast roll is carried on bearings 'inside' of the end shake posts, and under the shake rails. This device consists of a couple of angle bars to be slid across the machine inside the wire, and carrying a little four-wheeled trolley or buggy on which the breast roll may be deposited and rolled out to the front of the machine.

It is not usual for us to supply any device when the breast roll is carried in the usual position, as in your machine, outside the shake posts. Your paper machine and its breast roll are so small as compared with many modern paper machines that we should imagine no special apparatus would be needed. However, we can well imagine that something to lift the roll vertically out of its bearings and up high enough to enable the journals of the roll to clear the tops of the shake posts, and also the bottom of the roll to be deposited on the oak plank, which extends across the machine and rests on the side rails, would be very desirable. To our mind a pair of light chain hoists, say of one thousand or two thousand pounds capacity each, would be very suitable for this lifting.

We suggest that both hoists be carried by an overhead rail, extending across the machine over the breast roll, and also extended over the tending space in front of the machine, so that the total length of this rail would be a little more than twice the width of the machine. Each hoist would be hung on a trolley wheel, capable of being run along the overhead rail.

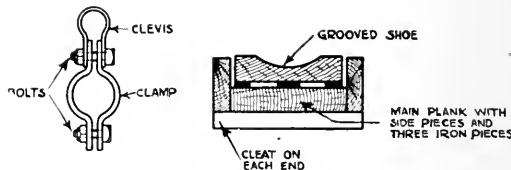
Our scheme of suggested operation would then be about as follows: Attach each hoist by a rope sling to each breast roll gudgeon and lift the roll with old wire on it high enough. Slide the oak plank through the wire and let it rest on top of the ends of the shake rails. Swing the breast roll over the plank and lower the driving side end of breast roll on to the plank, but leave the front end of the breast roll still supported by its hoist and say 1" or 2" above the plank. Loosen the back sling from the back journal. Slide the roll out to the front, the back end of the roll sliding along the plank and the front end being supported by its sling, and its hoist running along the overhead rail on its trolley. Then bring the back hoist over to the front side of the machine and attach its sling to the back journal of the breast roll and hoist enough to carry the back end of the breast roll. Leave the breast roll hanging on the two hoists while the oak plank is slid out, the old wire taken off, the new wire put on, and the oak plank slid back again. The back end of the breast roll can then be deposited on the front end of the plank, and the sling removed and its hoist and trolley run to the driving side of the machine. The breast roll can then be slid across the machine, the back end resting on the plank and the front end still being supported by the front hoist just above the plank. The back sling may now be attached to the back gudgeon and the back end of the roll hoisted to clear the plank, and the plank be removed. The breast roll may now be swung over its own bearings and lowered into them.

It seems to us that this series of operations corresponds very closely to the entire operation as carried out by machine tenders through their personal strength in the lifting and handling of the roll, but it does also seem to us that two light chain hoists would make the handling operation of the roll much easier than if it was done by the main-strength-and-awkwardness of the machine tenders.

**More about Handling a Breast Roll.**

By GEORGE W. CLARKE.

Mr. Clarke writes on this subject as follows to The Pusey and Jones Company, Wilmington, Del. His letter appears in the "Super-Calender."



We have, as you-know, six machines, two to a room. The breast roll of each pair is placed in line, over which we secured to the roof truss a line of 7" I beams, and on the lower flange we placed two trolleys which could be used on either machine. We attached rods to the trolleys with eyes in the ends, and of sufficient length to bring the one-ton chain blocks at a convenient distance from the floor. Instead of using a rope sling on the journals, we use a clamp having a clevis for the hook of the falls, the clamp is always secured to the journal with a wrench. In pulling on the roll, sometimes the trolley sticks and the rope might slip off. Instead of lifting the roll to take off the old wire, we cut it at the seam and roll it up at the couch roll, while other men are removing the bare breast roll, and instead of sliding the roll out on a plank, which would tend to scratch and injure it, we use a narrow plank scored or grooved the full length on the upper side, which is placed between the roll and the main plank resting on the rails, thus acting as a shoe. We make the main plank on which the roll is slid through the wire with sides to guide the shoe and roll, also to stiffen it. On the upper side between the guides we secure strips of 1/8" x 1 1/2" band iron on which the shoe, mentioned above, slides easily. The plank is elevated between the rails to keep it from slipping endwise.

**SAFETY FIRST.**

An Oklahoma editor tells of an old Indian that came into his office to subscribe for the paper. The editor took the money, then the Indian wanted a receipt. The editor tried to talk him out of it, Mr. Indian insisted on getting the receipt. After making it the editor wanted to know why he was so persistent about wanting a receipt. The Indian said: "Me die some time, Go to big gate and Saint Peter ask if I been good Indian. I say yes. He say, did you pay debts? I say yes. He say did you pay editor for paper? I say yes. He say where is receipt? I no have it. I have to run all over hell to find you and get receipt."—Exchange.

Note.—Subscribers to the Pulp and Paper Magazine get receipts—on asbestos paper if desired.

# The Outlook of the Paper Market

BY H. H. REYNOLDS, MANAGER OF SALES, B.D. RISING PAPER CO.

(Address before the Poor Richard Club, Philadelphia, November 4, 1920)

The situation has changed slightly with regard to a few items since this paper was read, but conditions and prospects in general still appear to be as analyzed by our friend and erstwhile fellow employee—Ed.

You want to know the outlook of the paper market—will prices be higher, or lower, or stationary; will paper be plenty or scarce? I shall endeavor to give you the facts of the situation—show you fundamental conditions—then you can judge for yourselves.

What I say will bear particularly on the better grades of writing papers as these are the grades which I know primarily. Incidentally, of course, these facts have a bearing on the whole paper situation.

### Selling Prices Have Advanced Less Than Costs.

As a point to start from, it should be noted that prices of fine writing papers today stand on a basis of 250 to 275 per cent figuring 1914 prices as 100 per cent.

A very careful estimate of the complete cost of the manufacture of fine paper in October, figuring each item of cost in the proportion required to make the finished product, gives us the average cost of manufacture as 308 per cent of the 1914 cost.

In other words, with the selling price of paper 250 to 275 per cent of the 1914 prices, the cost is 308 per cent. This is significant. The selling price of these grades has not advanced as fast as costs.

In face of this fact there is a waiting market. Why? Because certain other commodities have gone down. Because banks have limited credits presumably with a view of reducing prices.

Because people have not forgotten 1914 prices and think and talk about "getting back to normal."

Apprehension, then in a word, is the cause of the present lull in demand—apprehension that prices will be lower. Are such apprehensions well founded?

This will depend on such factors as

1. Cost of manufacture.
2. Supply.
3. Demand.
4. Volume of money and consequent purchasing power of the public.

If the cost of manufacture plus the necessary profit has not been exceeded, then prices will not go lower. The mills have no motive to run at lower prices, because the more they run the worse off they are.

If the supply is not adequate to the demand then, while there may be fluctuations in buying, the trend will be upward.

If the demand has been growing, while the supply has remained stationary, the trend will be upward.

If the volume of money in the hands of purchasers has increased, the trend will be upward.

Facts will show that the demand has increased 40 per cent or 50 per cent in the six years since 1914; that few or no fine mills have been built in this period; that the money in circulation or credits that can be used as money have increased about eight times.

Let us look at these things in detail, for if the

above conditions are true, those who wait for lower prices are likely to wait a long time.

### Specific Prices and Costs

Here are some actual figures of three principal representative grades, showing mill prices of 1914, mill prices of 1920, and the percentage of 1914 prices received by the mill today.

1914 Price	1920 Price	Percentage of 1914 Price
10 $\frac{1}{2}$ c	29c	276%
13 $\frac{1}{2}$ c	36c	266%
18c	46c	255%

Figures like these would, generally speaking, apply to all similar grades.

Now, here are some of the items of cost given for 1914, for 1918, and at the present times:

	1914	1918	1920	Percentage of 1914
Coal . . . . .	\$3.75	\$5.85	\$14.00	400%
No. 1 Linnen . . . . .	.08	.21	out of market	
No. 1 Shirt Cuttings . . . . .	.05	.12 $\frac{1}{2}$	.25	500%
2's and Blues . . . . .	1.75	5.25	5.75	328%
Sizing . . . . .	.06 $\frac{1}{2}$	.20	.17	261%
No. 1 Bleached Sulphite . . . . .	.02 $\frac{1}{4}$	.06	.08	355%
Bleaching Powder . . . . .	.01 $\frac{1}{2}$	.02 $\frac{1}{2}$	.06	480%
Machine Tender . . . . .	3.50	5.60	7.40	320%

In 1914 the last figure was for a 12 hour day, making \$7.00 a day. In 1918 and 1920 for an 8-hour day, making the cost of the present time \$22.20 per day against \$7.00, which is 320 per cent.

Figures of this kind could be multiplied but the items mentioned are the big items entering into the cost of paper and the total costs are very significant. Costs have risen faster than selling prices.

### Aggregate 1919 Mill Profits Estimated at 7%

From the American Writing Paper Company Bulletin, we quote:

"The United States Census returns for 1919 are expected to show that the net profits of fine paper manufacturers were probably under 7 per cent on the investment. Materials, wages, fuel, taxes, clerks, salesmen, and salaries used up 84 per cent of the 1919 income, and allowing for depreciation, repairs, insurance, bad debts, allowances, etc., it is probable that the net profit left was not far from 7 per cent."

It is, therefore, plain that any reduction more than 7 per cent would leave the industry doing business at a loss.

### Limited Mill Capacity

Now, as to supply: The mills were like the farmer who didn't shingle his house when it was fair weather because he didn't need to, and when it stormed he couldn't. Before the war fine mills were not built because the industry wasn't profitable. During the war materials could not be obtained. Now they are so high that nobody dares build. Costs of building are three times those before the war. With a 7 per cent yield on a pre-war investment, the mills would only have a little more than 2 per cent on the capital re-

quired to reproduce the mills today. Mills have not been built. What slight increase there may have been, has come about through improving existing plants. The United States has little more mill capacity on fine papers than in 1914.

**Present Demands About 58% More than 1914**

As to demand—there is a different story. The estimated increase in use of papers is about 8 per cent a year. Since 1914 this would mean about 48 per cent. This takes no account of export. Of total production 10 per cent is perhaps a fair estimate for export. This is practically all a new growth since 1914 and has to be added to the domestic increase, making some 58 per cent or more increase in demand since 1914.

**Money and Credits About Eight Times Those of 1914.**

Now as to money and prices: Fisher says, "If with a given volume of business, the money of a country is doubled, prices will double."

In other words, the public broadly speaking, is always willing to buy food, clothing, luxuries, and general supplies up to its financial limit. It is lack of money rather than lack of desire that limits buying. As money increases the public demand bids up prices. For illustration, if a country has a million purchases and a million dollars with which to purchase, prices will average a dollar per purchase. If it has a million purchases and two million dollars, with which to effect the exchange, prices will average two dollars per purchase. Now, counting currency, federal bank issues, and government securities, we have about eight times as much money as in 1914. In 1914, circulation was about \$35.00 per capita. It is now about \$51.00. Federal bank credits figure about \$30.00 more per capita. The government bonds, notes, and securities aggregate some \$25,000,000,000 on which as collateral \$20,000,000,000 can be borrowed at the banks or \$200 per capita. Counting these government securities at 80 per cent we thus have some \$281 per capita, against \$35 in 1914; or more than eight times as much. With this buying power prices must be high.

The above factors show a supply stationary for six years or more. A domestic demand nearly fifty per cent greater. A foreign demand for some 40 per cent more coming from large regions who do not make writing paper and cannot. (Latin-America with 100,000,000 people has no fine mills. Also Australia, New Zealand, India and Cape Colony.) Also a buying power in dollars eight times as great as in 1914.

**Conditions Demand Advance Rather Than Recession of Prices.**

Considering the facts thus far stated there is every reason for an advance. With a few exceptions the present price scale dates back to July. Since July have come the coal shortage and high prices and the new freight rates.

**Freight Rates Adding to Costs.**

Increase in freight rates is a more considerable factor in the paper situation than has been credited. The average consumer of paper says "40 per cent increase on the old freight rate will not affect the local cost largely." He figures that this will be the freight from the mill to the market; i.e., one freight rate representing perhaps 50 cents, increased 40 per cent or 20 a hundred.

This is only a small part of it. To get a ton of paper into the hands of the public will probably require paying freight on ten tons and the consequent increase of

about 40 per cent on ten freight rates. For instance, it takes from two to six tons of coal to make a ton of paper. It, also, takes about 2,700 lbs. of rags to make a ton of paper, but these rags have to have four or five freight rates paid on them before they get to the mill, i.e., cotton is shipped from the South to the cotton mill, from the cotton mill to the shirt manufacturers, from the shirt manufacturers the cuttings are shipped to the dealers, and from the dealers to the mill. Miscellaneous chemicals, machinery, etc., also enter into this. In addition, there is the freight rate from the mill to the merchant, from the merchant to the printer and perhaps still a further rate from the printer to the consumer.

Here are some representative freight rates per hundred pounds from Housatonic, Mass., to various points for 1914 and 1920 and the percentage of increase, from which it will appear that the present rates are from 208 to 321 per cent of the old rates, showing an average of about 260 per cent which must all be figured into the cost of paper.

**Freight Rates Per Hundred.**

	1914	1920	Percentage
Albany.....	13	34½	2.65
Washington.....	34	72	2.12
Philadelphia.....	19	45	2.37
St. Louis.....	59	1.23	2.09
Cincinnati.....	44	91½	2.08
Chicago.....	50	1.05	2.10
New York.....	14	45	3.21

The average freight rate of 1914 may be taken as roughly 25c per hundred pounds. Today it will average 260 per cent of this rate or about 60c. Figuring ten freight rates before paper reaches the consumer, the present cost of freight alone will be \$6.00 a hundred against \$2.50 on the old basis.

The last freight increase has occurred since the last advance and has therefore, not been included. The same thing is true of the premium on coal of eight to ten dollars a ton.

These two facts are significant. Today the fine mills are not making more than a normal profit. It would be to the advantage of the public, speaking broadly, for them to make more so as to build more mills and make more paper.

**The Coal Situation Parallels the Paper Situation**

Coal shows a situation parallel to what may happen in writing paper. In 1918 we had a record production exceeding consumption. The spring of 1919 showed considerable stocks in the hands of dealers and consumers. The impression was, "we are getting back to normal." Buying was restricted in order to take advantage of expected lower prices. 1920 opened with stock exhausted and bins empty. Then Europe, short of English coal, commenced buying and the price rose sky-high. 1920 production has been greater than 1919. If buying in 1919 had been normal and stock in the spring of 1920 consequently normal, much or all of the present shortage and high prices would have been avoided.

**"Getting Back to Normal"**

"Getting back to normal" is a dangerous slogan. If it means getting goods at cost plus a normal profit, it is all right. But if it means buying at 1914 prices, it is all wrong. That means putting labor on 1914 wages, that is to say, strikes, riots, bread lines, and industrial chaos. It means a financial crisis, with mer-



cantile failures and general disaster—a period the recovery from which would take years. It is wrong, because the world, generally speaking, with certain exceptions, is short of commodities and needs the stimulus of high prices to produce. 1914 prices would simply accentuate buying and consumption. Stocks already low, would be taken off the market and then would come a rebound and a scale of prices known only in Russia. With the pockets of the consumer bulging with money and 1914 prices in effect, stock of goods would melt away, and an orgy of waste would follow till they were gone. Then would come a period of famine of commodities and prices like those of Petrograd, where a pair of boots costs 500 roubles and a cab fare fifty.

#### Good Prices Necessary to Prevent High Prices

In other words, good prices are necessary to stimulate production, build factories, and maintain labor on the present cost of living and also to keep consumption within reason and to keep from having higher prices.

Speaking specifically of the fine writing paper trade, it is a grave question whether broadly speaking higher prices would not be to the public interest in order to stimulate the building of mills.

#### World Stocks of Paper Low

Not only in this country but all over the world stocks of writing paper are low. There are a hundred million people in Latin-America who haven't a fine paper mill. Figured at normal exchange, paper is higher in Europe than here. The United States makes over 50 per cent of the world's paper. We will have to furnish the bulk of the supply, not only for Latin-America but for India, Australia, Cape Colony, China, and New Zealand, which have no fine mills.

#### No Relief From Europe

There is no relief in sight from European papers or materials. European exchange, with a pound Sterling at \$3.50 and marks at \$1.80, means that European goods are at a premium. An American dollar is worth \$1.40 in England, in Germany it is worth about \$13.00. A mark is normally about twenty-three cents. If a German manufacturer can get twenty-three cents for paper worth a mark in Germany, he is getting thirty-one (31) times the price of the goods in Germany. Now this premium has been like a pump. It produces a powerful suction to draw goods to America. If England or Germany or other countries had paper, they would send it to America. Little or nothing has come. Europe has nothing to spare.

#### The Underlying Price of Wood

Now, while the finer papers are made of rags, the price of wood and wood papers affects them. In 1914 sulphite bond could be brought at five cents and a medium rag bond at 10c. When sulphite goes to 18c, there comes a shifting toward the better grades and the demand forces up the rag prices and the prices of papers made from rags.

Here is the wood situation: The items are clipped from the bulletin of the American Forestry Association, Washington, D.C.:

"We are consuming lumber three times as fast as we are producing it.

"New England, self-supporting in lumber twenty years ago, now has to import one-third of the amount used.

"Ten years ago the United States produced its entire supply of pulpwood but now much of it is imported. This means freight rates to be added to the purchase price.

"Ten years ago the United States produced its entire newsprint supply—now we import two-thirds of it.

"Only one-third of the newspapers issued in 1919 were printed on the product of American forests.

"Much pulpwood has got to be freighted 500 miles to mills.

"We bought nearly 1,400,000 cords of pulpwood from Canada in 1918 and prices have advanced from \$10 a cord to as high as \$25."

Pulp manufacturers are now paying as high as \$40 to \$50 a cord.

This wood situation is bad at the present time when there is no building to speak of and little new railroad or telephone construction.

The total wood supplies of this country, amounting to something like 850,000,000 acres, are about two-thirds exhausted and are being used up three times as fast as they grow. The wood situation, while it may fluctuate, is likely to grow worse and prices grow steadily higher as time goes by.

Curtailement of use of paper would make no difference in price, for over 90 per cent of our wood is used for things other than paper.

There is no probability of reduction in labor or of rags. The international coal situation, particularly if labor troubles in England continue, will make coal higher.

From these considerations it looks as if the present waiting movement in the market, which is welcomed by the mills as relieving excessive pressure, will work out to bring a buying movement later and substantially higher prices than the present.

Only about 7 per cent of wood is used for paper. It is plain that any falling off in paper would not affect the general price of wood, while if a revival of house building, railroad and telephone construction come on, prices will go higher still.

There is no more liability of generally lower wood prices than of buffalo skins, and for the same reason. Curtailement of wood papers will enhance the value of high-grade papers.

#### Stocks Low, Printers Busy

The stocks of fine paper at the mills are 4 per cent less than last year and in the merchants' warehouses are 25 per cent less. Printers' stocks are low. The volume of printers' sales up to October, in 1920, averaged 44 per cent greater than the 1919 average. The advertising agencies indicate more advertising in 1921 than the high record of 1920. All these things and many others indicate pressure for paper.

Prices of fine writing paper will not be lower, because, even should buying fall below mill capacity, the mills would not care to sell at a loss. They would take what business is offered at present rates and close. It would not pay them to stimulate the market by making prices below cost. The more they sold, the worse off they would be. It is very doubtful, if a 25 per cent cut such as was made in some other lines and which would wipe out all profits and bring loss, would be any particular stimulus to the market. The situation is psychological. Cuts in cotton and woollen brought no business.

Stocks are low, the printers busy, the public using paper.

#### Materials Advancing

Materials are advancing, labor is strong, coal is strong, and may become scarce enough to shut down the mills.

Costs hold prices where they are. The world can't today produce the paper it needs.

The paper situation is shaping itself as the coal situation shaped in 1918. Demand for coal during 1919 was held up by expectation of buying at lower prices. Disappointed in this, the public started in 1919 to refill exhausted stocks. The demand was a flood. Prices have gone to three times the war average.

The public, affected by declines in other commodities, is waiting to buy paper at lower prices.

Meantime, stocks already low are being further reduced under present conditions. One morning the public will awaken and commence to buy. The results will be startling in proportion to the length of the wait. They are likely to parallel the coal situation and to produce a new and higher price level.

#### Writing Paper Used in Direct Proportion to Volume of General Business

The use of fine writing papers does not depend on price. It goes into letters, envelopes, bill heads, statements, books of entry. No one writes one letter or makes one more bookkeeping entry because paper is cheap. No one writes one less letter because paper is high. No business man writes letters except at need. He writes what his business demands, and stops. The total cost of a letter, in paper, dictating, typewriting and stamping, is estimated at 25 to 30 cents each. Only a fraction of a cent is for the paper.

The cost doesn't influence the volume used; it is like lubricating oil in a factory—we use what we need—we use no more because it is cheap, we use no less if high. We have to keep the business going.

Writing paper varies in use with the volume of national trade. When a large volume of transactions is taking place, the use of writing paper is large. It is an invariable rule that "when freight cars are scarce writing paper is in demand." The "ton miles" of freight moved at the last report is 20 per cent greater this year than last.

It would have been better, from the point of view of the public, if profits had been higher, so that new mills could have been erected.

This is evident from the fact that while the paper industry entered the war-time period with large overstocks, these have been gradually reduced until at the present time stocks on the part of the printer, the merchant and the manufacturer are at low ebb, and yet the mills, in general, are well fixed with orders.

Now, the business of the country which consists of manufacturing, jobbing and distributing must be good for a long time to come, because stocks are generally low, people need them and have money to pay for them. Distribution will be large. To distribute large amounts of goods large amounts of paper will be used. Giant crops alone give the country the necessary buying power.

#### TELLING TIME.

The Time of Day I do not tell,  
As some do by the clock;  
Or by the distant chiming bells,  
Set on some steeple rock,  
But by the process that I see,  
In what I have to do;  
It's either Done o'clock to me,  
Or only Half-past Through.

—John Kendrick Bangs.

#### WHY CLOSE THE TIMBER INDUSTRIES?

By ROLAND D. CRAIG.

The effect of progressive forest exploitation, without provision for succeeding crops, is being felt in parts of the United States. At a hearing before the House Committee on Foreign Affairs in Washington, W. E. Haskell, of the International Paper Company, made the statement that "the Underwood Resolution, which provides for a commission to negotiate for the removal of existing export restrictions on pulpwood cut on the Crownlands of Ontario, Quebec, and New Brunswick, is the only measure yet presented to Congress which contains any assurance of a sufficient quantity of pulpwood to perpetuate the present production of our paper mills, to justify the installation of new machines, and to save the great pulp and paper industry of the United States."

This is not an accurate statement of the situation. The facts are: (1) The labour and manufacturing cost of converting pulpwood into pulp is very much less than the cost of converting pulp into paper. (2) The amount of water-power required to manufacture pulp is relatively high and, from an economic point of view, the benefit to the community would be increased if such power were used for other purposes. Further, it is notorious that, in the Northeastern states, this power is required for more important industries and its release would ameliorate the present coal shortage. (3) The paper mills of the Northeastern states can purchase pulp from Eastern Canada, the Pacific states, British Columbia or Alaska and with anything like the present prices, can conduct their operations at a profit. Col. Haskell's statement, however, affords further evidence of the serious extent to which the forests of the Eastern States have been depleted.

A recent report of the Louisiana Department of Conservation shows that similar conditions exist in that state in regard to lumber, and points out that Louisiana should and must practice forestry, in order that she may not be obliged to pay \$15 or \$20 per thousand feet for freight on lumber brought from the Pacific coast twenty years from now, and because her vast unproductive areas of cut-over lands are a heavy drag upon her prosperity.

With these examples of the disastrous effects of such methods in the United States, Canadians should not wait until an actual shortage overtakes us before we learn the lesson so plainly demonstrated.

Re-creating a forest is slow and expensive, but its productivity can be maintained by comparatively inexpensive means. These consist of, first, protection from fire and, second, proper methods of cutting.

No single system of cutting is applicable to all conditions, any more than the growing of all kinds of farm crops, and technical knowledge of the requirements of the different species is necessary. Under some circumstances, more complete utilization of the mature timber will result in satisfactory reproduction. In others, seed trees must be left in order to secure the kind of forest desired.

The increasing quantities of British Columbia lumber being sold in Eastern Canada is evidence of the already growing scarcity of available timber in the East, and, if the immense pulp and paper industry which has grown up in the last decade is to be permanent, steps must be taken at once to make provision for future crops instead of leaving cut-over lands as barren wastes.

# National and State Forest Policies for United States

All true friends of, and all dependents on, the forest will be pleased with the important steps advocated by the Committee on Forest Conservation of the American Paper and Pulp Association, whose report, as follows, was adopted at the associations' meeting in Chicago, Nov. 11. With the strong support of the several co-operating bodies there is great hope of having something accomplished.

Since the presentation of its report entitled "The Next Steps in the Forestry Program" at the Annual Meeting of the American Paper & Pulp Association, April 15, 1920, your Committee has been busily engaged in carrying out the authorization given it, to do all it could upon its own initiative and in co-operation with other agencies to secure the legislation outlined in that report, as being fundamental to a National Forest Policy, which shall eventually provide an adequate timber supply for the people of the United States.

Your Committee is very glad to report that its efforts have resulted in a highly gratifying measure of success, and that on October 15th it met in joint conference with representatives of the National Lumber Manufacturers Association, the National Wholesale Lumber Dealers Association, the Association of Wood-Using Industries, the American Forestry Association, the American Newspaper Publishers Association and the United States Chamber of Commerce, at which the entire matter was discussed at length.

## A National Forest Policy

Unanimous agreement was reached on all essentials of a federal legislative program, in accord with our previous reports and also substantially in accord with the recommendations made last June to the United States Senate by Chief Forester Wm. B. Greeley. Col. Greeley was at the conference by invitation and gave its conclusions his full approval on behalf of the United States Forest Service. It is expected that this preliminary agreement, through its full consideration of the public welfare, will receive the ratification of all the public and private agencies represented at the conference and also be acceptable to the majority of others interested, including the forestry departments of the several states.

The primary provisions are two-fold—for a considerable extension of direct federal activity in forest ownership and production, and for the development with federal aid and encouragement of such systematic policies in the several forested states as, being consistent with local conditions, will bring about adequate forest protection and reproduction in the interest of these states and of public at large.

Much of the responsibility for forest production lies with the states and private owners. To define that which lies with the Government and hence is properly for the consideration of Congress, the following legislation is proposed:

1. Authorizing the Secretary of Agriculture after consulting appropriate local agencies, to approve an adequate policy for each state, covering the essentials of fire protection on timbered and restocking lands, reforestation of denuded lands, and, where and to the extent necessary, the cutting and removing of timber crops so as to promote continuous production of timber on lands chiefly suitable therefor, and authorizing his

co-operation in the work required, provided there is also satisfactory local compliance in state legislation or administrative practice. Chief, although not entire emphasis for the time being, is placed on fire prevention, as the most important single step, and not less than a million dollars should be annually available for such co-operation with the states.

2. A survey to obtain necessary information as to forest resources, forest production and forest requirements of the nation.

3. Provision for studies and experiments in forest reproduction methods, wood utilization, timber tests, wood preservation, development of by-products and other steps to bring about the most effective use of the nation's forest resources.

4. Provision for a study of forest taxation, to assist states in devising tax laws which will encourage the conservation and growing of timber. Investigation also of methods of insuring against forest losses by fire.

5. Provision for more rapid replanting of the vast areas of denuded lands within the National Forests.

6. Appropriation of ten million dollars a year for five years for the purchase of lands which should be added to the National Forest system, whether or not on the the headwaters of navigable streams as such purchases are now limited.

7. Authorizing acquisition of similar lands by exchange of land or timber when clearly in the public interest.

8. Authorizing the addition to National Forests of lands now in other forms of government ownership but found chiefly suitable for permanent forest production.

Some of these features of a complete Federal program will doubtless be covered in whole or in part by recommendations to Congress by the Secretary of Agriculture in connection with the agricultural appropriation bill. It was felt by the conference, however, that they should be presented to Congress in a comprehensive measure, clearly setting forth the picture of an adequate national forest policy and proper Federal participation therein. By this means, with other efforts, the necessary private and state participation can best be shown and obtained.

## State Forest Policy.

The responsibility for the carrying out of a National Forest Policy, aside from the administration of government-owned lands, rests upon the State authorities and private owners, since under our form of government the control of corporate and private activities is retained primarily by the States, and is not delegated to the Federal Government.

In order, therefore, to link up National, State and private activities in an effective program, it is necessary that the States in which forest land constitutes any considerable factor shall establish essential requirements in protecting timbered and cut over land from fire, in reforesting denuded lands, and, where and to the extent necessary, in the cutting and removing of timber crops by such methods as will promote continuous production of timber on lands chiefly suitable therefor.

With due regard for all interests concerned, based upon its own experience and study of the question, together with suggestions received from many pro-

minent foresters, your Committee believes that an adequate and effective State Forest Policy should include the following principles and provisions:

1. That all soil shall be made productive of the crop to which it is best adapted or for which there is the greatest public need.
2. That while agriculture and forestry are based upon soil production, the methods necessary in forestry and the time involved are so different from those of agriculture that forestry demands an entirely different form of administration.
3. That State Forest Policies shall be initiated and carried out in co-operation with the National Government and with private owners wherever and to the fullest extent possible.
4. That State Forest Legislation shall establish general principles and procedure only and vest in a properly constituted and non-political body, acting through technically qualified representatives, the responsibility for the fixing of regulations and enforcing them.
5. That the paramount and immediate consideration in any Forest Policy is the creation and maintenance of effective means for the prevention and control of fire on all forest lands of whatever ownership, and that every owner of forest land shall be required to conduct operations thereon in such a manner as to avoid creating a fire menace to adjacent property.
6. That forest surveys, land classification, forest research and forest education shall be provided for.
7. That there shall be such changes and adjustments in prevailing systems of taxation as will enable all forest lands to be equitably taxed thereunder, yet will not discharge the holding of private forest land for future crops without impairing local revenues.
8. That the state, upon request, shall assist the private owner of forest lands to make them continuously productive through the preparation of working plans, supplying of planting material and supervision of silvicultural operations free of charge or at cost.
9. That the state be empowered to take over at a fair valuation and administer as part of the system of public forests any land, which, after competent examination, is classified as suitable only for timber growth, in case the owner refuses to avail himself of the opportunities and assistance provided by the public to encourage forestry upon private lands.
10. That the acquisition of forest land by the State is essential to a sound forest policy.
11. That all State-owned forests shall be utilized for continuous production, both for direct returns in forest products and indirect returns in soil protection, game and recreation.
12. That all State-owned forest property shall be capitalized upon the records of the administrative body so that all expenses in connection with the development thereof and returns therefrom may be accounted for on a business basis to the people of the State who furnish the funds for the undertaking and enjoy its result.

#### In Conclusion.

Your Committee submits the foregoing as the result of its work during the past six months and recommends that if the views here set forth meet with the approval of the members of the American Paper & Pulp Association the Committee be authorized to proceed further in its efforts to bring about the enactment of National and State Legislation of the character suggested.

Respectfully submitted, D. A. Crocker, W. E. Haskell,

R. S. Kellogg, C. H. Worcester, Frank L. Moore, Chairman.

#### NATIONAL FORESTRY PROGRAM COMMITTEE.

Representatives of the most important paper and lumber industries, of the wholesale lumber distributors, newspaper organizations, wood-using industries and the general public met at Washington recently and reached an unanimous agreement with regard to a national forest policy. A permanent committee, to be known as the "National Forest Program Committee," was organized. R. S. Kellogg, secretary of the Forestry Committee of the American Pulp and Paper Association was elected chairman, and W. B. Bullock, secretary. The other members are: E. T. Allen, Western Forestry and Conservation Association; P. W. Ayres, Society for Protection New Hampshire Forests; Elbert H. Baker, American Newspaper Publishers Association; Wilson Compton, National Lumber Manufacturers Association; Hugh P. Parker, American Paper and Pulp Association; John Foley, Association of Wood-Using Industries; E. W. McCullough, Chamber of Commerce of the United States; P. S. Ridsdale, American Forestry Association; and J. Randall Williams, National Wholesale Lumber Dealers Association. The headquarters of the committee will be at the office of the American Pulp and Paper Association in New York.

#### WALL-PAPER MAKING IN ENGLAND.

(From Our London Correspondent)

This week the ordinary general meeting of the Wall-Paper Manufacturers, Ltd., was held in London under the presidency of Mr. Edgar Smith.

In a short speech Mr. Smith pointed out that the past year had been a very satisfactory one for their company and quite apart from the rush of orders they had just begun to reap the benefits of that policy of "efficiency" which was advocated two years ago. They had made progress in improving the methods of manufacture and distribution of their papers, and were continuing with increasing energy of their reforms in every department and the results of this work were evident in every mill. The past year had been a difficult one for manufacturers. There was a great demand for goods but a great shortage of raw materials, with increasing costs in every direction, including labor and carriage; and many of these rising costs were unexpected. They were therefore, forced to make some increases in prices during the year, but as these increases followed the great drop in prices which they made at the beginning of the season, their prices throughout the season had been lower than at Armistice time. Their object had always been to enable buyers to purchase at as low a price as possible and their mill prices, which were the same for export as for home trade, had been low enough to enable them to hold their own in the large overseas markets where wall-papers were used.

The export trade, which suffered considerably during the war, had received a great deal of attention and they had recovered their old position of supremacy in the markets of the great Dominions.

Turning to the balance sheet, Mr. Smith said it was gratifying that in the 21st year of the company's operations they had attained their highest output and made the largest year's profit. The sum available for appropriation was £592,211.

## British Trade News

(From Our London Correspondent).

The Norwegians are getting their "backs up" over a recent visitation of some English gentlemen to Norway in search of a pulp mill so as to keep the raw material supplied to one of the British mills. The object of the visitation has been resented by the official organ of the Norwegian Chamber of Commerce in London, which is the mouthpiece of pulp and paper men here and in Norway, in some strong language and it depicts the "brotherly" feeling that exists. As is well-known there is a big trade between Norway and British mills in pulp and paper, and in the past some of our most successful papermakers have had big financial interests in Norwegian pulp mills. Whether the success following these investments has hampered, or frightened, the pulp men of the Norwegian Chamber of Commerce in London one cannot say, but at all events their official organ — or newspaper — says that Norway is glad to have foreign capital to develop her industries, but they do not want to be the slaves of it. Then it goes on to say: "Englishmen are very welcome in Norway—more welcome than any other foreigners. But they should not talk too much to Norwegians about England getting a world control of the canning industry, and then of the pulp and paper industry. The Norwegians have put in so much hard work, both by brain and hand, to build up these industries to the pride and satisfaction of their country and themselves, that they resent the idea that all this should fall into the hands of some few foreigners, who want to conquer the world and make the native proprietors and managers only servants and dependents of a monopolistic combine." Judging by these remarks somebody has got the "wind up," to use a war expression. Supposing Canada and other countries adopted this policy where would the pulp and paper industry be in another 20 years? Norwegians say: "We will take your money to help us push our pulp and paper industries, but hands-off our mills." Charles Fenerty when he made the discovery of groundwood in Nova Scotia, gave the results of his labors away to the world. Norway profits to-day by the discovery. The Germans improved on the discovery and sought new markets. Norway profits to-day by their research work and the British buyer patronises the Norwegian market, as well as the German and Canadian markets. Then why should Norwegians, considering all the circumstances, get their "backs up" because a couple of gentlemen say they are going from England to Norway to buy a pulp mill? The whole idea is ludicrous. It is a policy not good for the pulp industry in general. What is wanted is more money invested in pulp concerns, — and some of the old ones scrapped — more research work and a dignified feeling existing between all pulp producing countries. I am sure the present policy advocated will be condemned by the old school of pulp men in Norway; indeed, it is a thoughtless statement arising from the new school who forget that co-operation with foreign thought, and interchange of trade — not to mention amicable social relations. Norwegians of the old school placed Norway's pulp and paper industries in the happy position they enjoy to-day.

### Pulp Imports.

The total imports of pulp into the British market from all sources during the eleven months from Janu-

ary to November last, show a considerable increase over the same period in 1919. The figures are:

	1919	1920
Chemical Pulps . . . . . Tons.	346,235	508,281
Groundwood . . . . . "	486,899	497,205
Esparto . . . . . "	64,468	155,826

Taking the totals of all raw materials, including rags, the quantities reached 1,178,139 tons for the eleven months in 1920, compared with 904,084 tons for the corresponding period in 1919.

At this period of the year there is usually some inquiry in the pulp market for future supplies, but it is a regrettable fact that depression exists at present as regards new business. Things are dull and practically no market is existing. Only supplies under contracts are arriving and the present position will go on until after the new year. One noticeable feature of the pulp supplies is a falling-off in Canadian groundwood receipts.

### Countries of Supply.

The imports of groundwood for November show a considerable falling-off, except, in the case of supplies from Norway. Canada shipped 4,625 tons, as against 7,674 tons for the same month in 1919; Sweden 3,678 tons, against 4,059 tons; Norway 19,437 tons compared with 16,738 tons, and from other sources 2,673 tons were received as against 3,920 tons in November 1919. The supplies for the eleven months, January to November now stand as follows:

	1919	1920
Sweden . . . . . Tons.	80,935	81,174
Norway . . . . . "	263,528	283,374
Canada . . . . . "	89,188	77,626
Other Sources . . . . . "	20,520	27,679
Totals . . . . . "	454,171	469,853

Dry groundwood was imported during the eleven months to the extent of 27,352 tons, as against 32,428 tons for the corresponding period in 1919.

Bleached sulphite shipments from January to November are now as follows:—Finland, 231 tons (compared with 95 tons in 1919); Sweden, 4,787 tons (2,153 tons); Norway, 15,460 tons (9,608 tons); Germany, 525 tons (Nil); other sources, 5,531 tons (4,097).

Unbleached sulphite imports show a fair increase on the eleven months as follows:—Finland, 37,156 tons (compared with 4,233 tons in 1919); Sweden, 306,307 tons (227,098 tons); Norway, 84,889 tons (56,007 tons); Germany, 6,980 tons (Nil); Other sources, 35,664 tons (39,595 tons). Canada is included in other sources in all cases.

### Pulp and Paper Markets.

A depression in the paper market naturally causes a depression in the pulp market. That is the position to-day in England. British mills are working simply on export account, because dullness pervades the domestic market. There is also a strong feeling existing in London at present that all kinds of papers are going to tumble down in prices about the middle or end of January. This feeling has considerably upset the paper market. For instance, I was speaking to a big buyer this week and he said to me: "I hear paper is coming down with a big fall in the new year. Is that so? If it is I cannot afford to invest at present and lose my money when it comes down in the new year. I have got a quiet hint that it is bound to come down in prices." Now with a feeling of this kind and buyers holding back to see what the future will bring them, it is difficult to do business and that is one of the reasons why

depression prevails. Newsprint is finding a good outlet. Supplies for the month of November have been received as follows:—

	Cwts.	£
Newfoundland . . . . .	166,037	508,116
Canada and other sources . . . . .	37,775	111,716
U. S. A. . . . .	1,531	8,169
Belgium . . . . .	860	4,170
Germany . . . . .	19,938	62,346
Norway . . . . .	43,145	121,976
Sweden . . . . .	33,108	72,257

It will be seen that Germany is again in the market somewhat strongly with newsprint, and that Newfoundland has now a splendid position in the British market.

Of pulp small supplies keep trickling in from Canada. But the pulp business transacted to-day is hardly worth writing about. Prices are quoted as follows:— Bleached sulphite, £60; Easy bleaching, £47; Sulphite news, £37; Unbleached Soda, £40; Soda Kraft, £35; Groundwood (wet) £13; Groundwood (dry), £24.

#### Pulp. — A General Review.

According to the latest news received in London the Swedish pulp and paper manufacturers report dull trade and a tendency toward falling prices and reduction in output. The pulp industry, in particular the sulphite branch, has orders for a great part of next year, but in the past month no new contracts of importance were entered into. For groundwood a few small orders were received from the United States. In this branch reduction of work is threatened by the extremely low level of the lakes and rivers of North Sweden which causes difficulty in moving logs. Prices during the past month have been out to meet competition and for wet groundwood 225-240 crowns a ton f.o.b. a Swedish port is quoted. The sulphite industry is being affected by a resumption of German competition which ceased in 1914. The Germans can offer sulphite at extraordinary low prices as the result of cheap coal and labor, but Germany's present export capacity is not more than 60,000 tons a year. The present Swedish price for light-bleaching sulphite is 850 crowns f.o.b., and for strong sulphite 775 crowns. The sulphite branch is much depressed, Sweden and Norway having agreed on dropping paper out, it is now down to 33 per cent. But the paper market in Sweden and Norway is depressed, as in England. America is buying newsprint in Scandinavia, so that Sweden's export capacity for 1921 is estimated at 175,000 tons, Norway's 150,000 tons, and Finland's 100,000 tons. Germany is producing newsprint at the low rate of 2,500 marks a ton. This paper is sold abroad at 8,000 marks as against Sweden's export price of 1,100 crowns. This seems high, but the value of the mark in the rate of exchange reduced Germany's price considerably below Sweden's. In North Sweden 10 per cent is reported in the reduced cost of production this winter and a reduction of 25 per cent in paper output.

#### WHOLE FOREST SAW MISS OAKES WED PINE.

Norfolk, Va., Nov. 11. Miss Ada Oakes, daughter of Mr. and Mrs. J. C. Oakes of Washington, N. C., became the bride of Walter Pine of Salisbury, N. C. The best man was Robert L. Birch; the brides maid, Anna Lee Laurel; and the preacher, the Rev. Oscar T. Wood. The couple went to Hickory, N. C. to spend the honeymoon with the bridegroom's aunt, Mrs. E. W. Shingle.

#### FORESTRY LEGISLATION COMMITTEE AT WORK

"The increased prices of American newspapers, influenced by the shortage of the wood from which their paper is made, is only one example of the manner in which America demands protection of its forests, both by conserving what we have left, and the production of trees on land that is now idle.

"To secure the legislation which will so save the nation's forests is the whole purpose of legislation which will be introduced in congress, probably within a few days, through an agreement on a national forest policy by all the wood using associations of the country and the forestry organizations of the country.

"The American Newspaper Publishers Association is only one of the co-operating agencies backing this legislation, for lumbermen, paper manufacturers, and the users of their products are working together as a unit for a national policy."

This was the manner in which Warren B. Bullock, Director of Forest Extension at the New York State College of Forestry at Syracuse, outlined the forestry situation in America when he arrived in New York to take up his duties as secretary of the National Forestry Program Committee, composed of representatives of the newspaper publishers, lumber manufacturers and dealers, paper manufacturers, and forestry associations of the country.

Mr. Bullock is a western newspaper man, originally of Milwaukee, who has for several years past been devoting most of his attention to work in the wood using industries. After his discharge from the army, where he served as captain and senior instructor in the Jacksonville parent school of the Motor Transport School, he was assigned by the state college of forestry to the work of extending through New York State the campaign to properly utilize the 8,000,000 acres of potential forest land. From this work he has borrowed by the newly formed national committee to co-ordinate the work of the various national associations which are pushing the adoption of a forest policy for the nation.

The national committee has opened offices at 1102, No. 18 East 41st Street, with R. S. Kellogg as chairman, and Mr. Bullock as secretary. The committee has already practically completed the formation of the legislation needed to put into effect a national forest policy, and the completed bill will probably be introduced in congress before the first of the year.

The bill provides in its most important elements for the addition of land to the national forests, protection of public and private timber from fire, determination of land available for forest growth planting of timber on potential forest land now idle, and similar steps for the maintenance of a future raw material supply for the paper, lumber and other manufacturers of the nation.

Mr. Bullock points out that New York and Pennsylvania are now leading the nation in the amount of land being reforested, but that the work now being done in New York State must be duplicated in the national field if America is not to face a future famine in paper and lumber.

Chairman Kellogg, in a letter to the Editor, adds: "His work will not be publicity, but the task of representing the Committee in co-ordinating the work of the various organizations affiliated in this important movement."

# PULP AND PAPER NEWS

An order made by Master in Chambers Cameron at Osgoode Hall, Toronto, has added the Rainy River Lumber Company, Limited, to the defendants in the action brought by the Attorney General against the Shevlin-Clarke company. The action is for the cancellation of timber limits, for the return of certain moneys and for damages for trespass.

A number of the mills just now are considering just what they will do in regard to the yearly bonus to employees. Enquiries made during the past few days reveals the fact that in some cases the bonus will not be paid to the employees. One of the leading mills stated that as their institution was unionized now the matter of bonuses was one that would have to be taken up with the unions and that they were not in a position to pay the bonuses of their own volition. Another mill owner stated that his company was going to devote their efforts towards keeping up the wage scale instead of paying bonuses. Other mills will pay their employees the usual bonus this Christmas.

The coating paper mill at Georgetown of the Provincial Paper Mills, Limited, has been closed down Christmas week to allow of certain necessary repairs being made to the machinery.

The new paper making machine being installed in the Interlake Tissue Mills at Thorold is expected to be in operation about the middle of January.

Visitors to Toronto this week were Mr. R. T. Houk, sales manager of the George H. Mead Company, Dayton, Ohio, and Mr. A. Gaudette of the Sault Ste. Marie mill of the Spanish River Pulp and Paper Mills, Limited.

The tenders for the English River pulp limits were opened by the Ontario Government on Dec. 22 with the result that E. W. Baekus, being the highest bidder, gets the limits. The tenders were for the bonus in a lump sum which the tenderers would offer. The dues are regulated by the agreement and are the same in all new contracts. The bonus offered by the Baekus interests is \$50,000, which is twice as much as the next tender. Four tenders were offered to the Government. One was for \$5,000 from a British Columbia Company. There were two from United States companies at \$25,000 each. In addition to the bonus Mr. Baekus must pay 80¢ per cord for all spruce cut in the limits and 40¢ for other timber and the lease is conditional upon the erection immediately at the town of Kenora of a pulp and paper mill which will be capable, when fully equipped, of producing two hundred tons of paper daily. The plans call for a 300-ton mill.

Mr. Francis Byrne, aged 83, died this week in Toronto. For 45 years deceased had been financial manager of the Methodist Book Room, Toronto and in that capacity was well known throughout the province among ministers and laymen.

Reports current last week that the rate decided upon a few weeks ago for newsprint sales by Spanish River and Abitibi companies, which was seven cents per pound or \$140 per ton for the first half of 1921, would be modified proved correct. It was announced this

week in Toronto that these companies have fixed their price at 61½¢ for the first quarter of 1921 which will place them on the same basis as the International Paper Company and the Canadian Export Company.

No fewer than 16 courses in forestry and 26 in botany exclusive of graduate work, are now being given in the old Queen's park residence housing these two growing departments in Toronto. In all over 700 students received instruction there last session. Besides a new building the Faculty of Forestry urgently needs a practice camp and forest experimental station a post-graduate course leading to the Master of Forestry degree, a forest ranger's course and a forest products museum.

The Kingston Whig will get damages from the E. B. Eddy Co., for paper that the company did not supply during 1918. The Appellate Division at Osgoode Hall, Toronto, has handed down this judgment. The Whig has a contract with the E. B. Eddy Company to supply approximately 150 tons a year for 1916, 1918. The meaning of the contract hinged on the word "approximately." The company allowed an arbitrary ten per cent more than the 150. The court read "approximately" to mean the usual amount of paper required by the Whig, more than 200 tons a year, and gave judgment for the amount that the Whig suffered through buying paper elsewhere.

At the recent meeting of the Woodland Section of the Canadian Pulp and Paper Association Mr. George Carruthers, President of the Interlake Tissue Mills, protested strongly against the tremendous waste of prospective pulpwood by the indiscriminate cutting and sale of Christmas trees and remarked that a substitute for the valuable trees might be found. That the idea has taken hold, in the juvenile mind at any rate, is indicated by the following letter which Mr. Carruthers received in his mail this week. Needless to say the lad will be a few dollars richer through Mr. Carruthers, as the result of his suggestion.

Cornwall, Ontario, December 11th, 1920.

Dear Sir:—

In reply to your ad in the "Montreal Daily Star" in the appraisal of cutting down of cedar tree for Christmas celebrations, I have two simple ideas of celebrating Christmas, one is, take a board 2" x 2" if desired and any length and nail it to a solid block or box, having this done, start at the bottom and going upward nail strips of boards on any size 1" x 1" being suitable representing branches. Then after all this is done wrap colored tissue paper or tinsel around strips. This acts as a Christmas tree and is much stronger for it will hold any kind of toys, I am showing you this plan below.

The other idea is similar to that one, it is made with the pole and branches on the top of an imitation fire place as drawn below. I have given you two brief descriptions of imitating a Christmas. I tried the first one and its works well so I hope this will please you.

I remain, Yours truly,

(Signed) PERCY HARRINGTON.

P. S.—I also enclosed a rough sketch painted,



# Technical Section



## REVIEW OF RECENT LITERATURE.

### PATENTS.

**E-2. Tanning material from waste sulfite liquor.** Ger. Patent No. 304,349, W. MENSING, Freiburg, Feb. 15, 1916. *J. Soc. Chem. Ind.*, **39**, 274A, (1920). A tanning bath consists of waste sulfite liquor which has been heated with solid or liquid oxidizing agents, such as chlorates, nitrates, permanganates, or chromates.—A. P. C.

**E-2. Manufacture of an adhesive from waste sulfite liquor.** Ger. patent No. 316, 234, K. HUTTENES, Dusseldorf, Feb. 14, 1918. *J. Soc. Chem. Ind.*, **39**, 309A, (1920). Lead acetate is added to waste sulfite liquor and the soln. is evapd.—A. P. C.

**E-5; F-5. Cellulose digester.** Can. patent No. 195,943, A. G. WASTAD, and E. L. HAAG, Hunsfos, Norway, Jan. 13, 1920. Claims allowed 4. Same as Ger. patent No. 316,323. See *Pulp & Paper*, **18**, 301 E-5, F-5, March 18, 1920.—A. P. C.

**E-5. Method of preparing pulp.** U. S. patent No. 1,327,221, C. BACHE-WIIG, Portland, Me., Jan. 6, 1920. *J. Soc. Chem. Ind.*, **39**, 264A, (1920). Cellulosic material is treated with NaCl and the mass is subsequently cooked with bisulfite liquor until the ligneous matter has been separated from the fiber.—A. P. C.

**F-5. Process of producing soda-cellulose, particularly wood-cellulose.** U. S. patent No. 1,319,360, E. L. RIXMAN, Djursholm, Sweden, Oct. 21, 1919. *J. Soc. Chem. Ind.*, **39**, 360A, (1920). (Same as Eng. patent No. 116,288, *Chimie und Industrie*, 2,963 (Aug. 1919; see *Pulp and Paper*, **17**, 1073 F-5, Dec. 11, 1919). The raw material is boiled with NaOH soln. (60 gr. per l.) in presence of a contact substance which is insol. in NaOH and furthers reductions; e.g. Hg.—A. P. C.

**K-6. Process of treating fibrous plants (yucca) for the recovery of fibers.** U. S. patent No. 1,330,127, W. LOEHR, Bloomington, Cal., Feb. 10, 1920. *J. Soc. Chem. Ind.*, **39**, 292A, (1920). Yucca plants are crushed, boiled in an alkaline soln. until the cellular tissue is softened, treated with dilute alum soln., washed in cold water, and the fiber then shaken and dried.—A. P. C.

**K-6. Preparation of textile fibers from raw plants and production of paper therefrom.** Ger. patent No. 318 203, Nesselmann, G. m. b. H., Feb. 2, 1918. *J. Soc. Chem. Ind.*, **39**, 400A, (1920). The raw material is treated with emulsions of mineral oils or halogen derivatives of hydrocarbons. The oils may be emulsified with soaps, sulfonated oils, etc.—A. P. C.

**K-8. Dyeing paper pulp with insoluble artificial coloring matters.** Ger. patent No. 316,259, Farbw. Vorm. Meister, Luems, and Brunnig, Hoechst, Aug. 5, 1917. *J. Soc. Chem. Ind.*, **39**, 331A, (1920). The paper is intimately mixed with the coloring matters converted into a sol. form or with the sol. components from which the coloring matters are formed, in the presence of a small amt. of water. The process is conducted not in the ordinary, but in edge-runners, pulpng machines, and kneading machines or other appliances with only small quantities of water.—A. P. C.

**K-10. Process of size for paper.** Ger. patent No. 316,624, A. MITSCHELECH, Freiburg, Sept. 22, 1915. *J. Soc. Chem. Ind.*, **39**, 261A, (1920). Tannery glue is

treated with water-glass and the dark-colored substance which is deposited after some time is separated. The purified clear liquid is added to the paper pulp in the hollander.—A. P. C.

**K-10. Process for engine-sizing of paper and paste-board pulp.** Ger. patent No. 303,828, Zellkoll Ges. m. b. H., Cologne-Rodenkirchen, Aug. 11, 1916. *J. Soc. Chem. Ind.*, **39**, 264A, (1920). The sizing agent is an easily dissociated org. salt of Al such as the acetate or formate, which may be obtained by the interaction of Al sulfate or alum and an easily obtainable salt of the org. acid, such as the Ba salt. The use of soap or resins in addition is not necessary.—A. P. C.

**K-18. Fireproofing composition and process of making same.** U. S. patent No. 1,338,322, T. B. MUNROE, Assignor to B. Q. G. Dahlberg, April 27, 1920. *J. Soc. Chem. Ind.*, **39**, 445A (1920).  $ZnCl_2$  is dissolved in excess of  $NH_4OH$ , and the free  $NH_4OH$  is neutralized by the addition of a substance capable of forming therewith a fire-resistant compd.—A. P. C.

**K-18; K-0. Improving adhesive compositions.** Ger. patent No. 316,080, M. SARASOHN, Berlin, July 2, 1918. *J. Soc. Chem. Ind.*, **39**, 309A, (1920). Adhesive compns. from water-glass, waste sulfite liquor, or the like, are improved by the addition of a small quantity of licorice extract or glycyrrhizin.—A. P. C.

**K-23. Waterproofing fabrics of all kinds.** Ger. patent No. 303,390, Badische Anilin- und Sodafabrik, Ludwigshafen, Aug. 2, 1917. *J. Soc. Chem. Ind.*, **39**, 331A, (1920). The fabrics are treated with emulsions of crude paraffin and alkaline substances. Crude paraffin, unlike the purified hydrocarbons, readily forms with alkalis emulsions which are stable in the cold. The creosote in the crude paraffin exerts a disinfectant action.—A. P. C.

**K-23. Paper reinforcing machine.** Can. patent No. 196,028, The Paper Products Machine Co., Boston, Assignee of C. H. HOWARD, Saugus, Mass., Jan. 13, 1920. Claims allowed 46.—A. P. C.

**K-0. Moistener.** Can. patent No. 195, 945, J. P. NEHSEN, Assignee of K. K. Nielson, Chicago, Jan. 13, 1920. The moistener consists of a tubular shell having an open end, a closure for said end comprising a flexible and normally outwardly bowed and minutely perforated resilient disc, and a collar integral with said disc and secured to the open end of the shell, a moisture previous member disposed outside the closure, and means detachably carried by one of the first named elements for holding the moisture previous member in position. Claims allowed 8. A. P. C.

**L-5. Process for the manufacture of incandescent mantles from nitro-cellulose.** Ger. patent No. 312,736, J. GOOSMAN, Germany. *Chimie und Industrie*, **3**, 625, (May 1920).—A. P. C.

**L-5. Adhesive for articles made of cellulose derivatives.** Ger. patent No. 317,112, Farbenfabr. vorm. F. Bayer und Co., Leverkusen, Oct. 26, 1917. *J. Soc. Chem. Ind.*, **39**, 361A, (1920). The dimethyl, diethyl, or B methyl ester of adipic acid may be employed as an adhesive for articles made of cellulose derivatives.—A. P. C.



**L-7. Prevention of mould growth on paper yarn.** Ger. patent No. 318,307, Mr. SARASON, February 9, 1918. *J. Soc. Chem. Ind.*, **39**, 440A, (1920). The yarn is impregnated with cellulose extract (Zellstoffextrakt) preferably after the latter has been fermented.—A. P.C.

**L-5. Production of material for nitration from wood cellulose and cotton.** Ger. patent No. 300,844, C. CLAESSEN, Berlin, July 18, 1915. *J. Soc. Chem. Ind.*, **39**, 315A, (1920). Wood cellulose and cotton are mixed together with water, to a thick pulp, dried, and further mixed. The bleaching may precede or follow the wet mixing. In this way equal parts of the materials can be mixed and nitrated together to yield a colloidion dissolving to a clear liquid and equal in stability to that obtained from nitro-cotton.—A. P.C.

**L-6. Manufacture of gas mantles from cellulose.** Ger. patent No. 312,577, Deutsche Gasluhlicht A.-G. (Lueriges), Feb. 27, 1918. *J. Soc. Chem. Ind.*, **39**, 411A, (1920). Cellulose threads are converted partially into hydrocellulose; the mantles made from these threads have properties similar to those of ramie and artificial silk mantles.—A. P.C.

**L-7. Method of impregnating textile or paper yarns or fabrics.** Ger. patent No. 312,686, Deutsche Pyroxitiges m. b. H., July 4, 1918. *J. Soc. Chem. Ind.*, **39**, 445A, (1920). The yarn, etc., is impregnated with wood tar and then dusted over with ZnO; the latter combines rapidly with the tar and forms a dry, wax-like mass.—A. P.C.

**O-3. Water softening composition.** Can. patent No. 195,707, JAMES R. CAMPBELL, West New Brighton, N.Y., Jan. 6, 1920. A composition for softening water consisting of  $\text{Na}_2\text{CO}_3$ ,  $\text{CaO}$ , Na silicate,  $\text{NaOH}$ , Na bichromate,  $\text{Na}_2\text{PO}_4$ . Claims allowed 6.—A. P.C.

**M-0. Automatic sampler for liquids.** Eng. patent No. 123,173, T. ROBERTS, England, *Chimie and Industrie*, **3**, 619-20, (May 1920).—A. P.C.

### "FOOL-PROOF" BELT SHIFTERS.

Too much importance cannot be attached to having belt shifters in a plant that are "fool-proof." When one recalls the many accidents that have resulted from unreliable shifters—thumbs torn off, arms mangled and twisted out of shape—the purchase of the best equipment to be had would seem to be a good investment, regardless of price.

Buyers should take every precaution that this important part of their mill equipment is at the same time simple and efficient. The safety factor of such equipment will more than repay the initial expense and the output of each individual machine will be greatly increased. The following requirements necessary for efficient shifter mechanism should be followed as nearly as possible if safety is to be insured in the plant.

(1) Devices should operate positively and promptly at all time without any necessity of operator touching the belt with his hand.

(2) Device should be such that the operator can quickly manipulate any change of speed of belt required, from his normal working position at machine, obviating any necessity of his approaching the belt.

(3) Device should be so constructed as to cause the least possible wear or fraying of the edge of the belt.

(4) It should be possible to guard the belt with such material and have no necessity for operator to open the guard, except for making immediate repairs.

Belts shifters which meet these specifications are particularly desirable on cone-driven machines. They

will instantly throw the belt from high speed to low, low to high or to intermediate step, without the operator leaving his working position.

In the hands of a workman who senses the need of more or less speed, they add to the output of the machine. Such shifters can be applied to all lathes, milling machines, shapers and drill presses. The Amphibian.

### PAPER FROM WOOD PULP MADE IN ENGLAND IN 1801.

By the kindness of Sir Mayson Beaton, the Canadian Forestry Magazine has been privileged to look over a most interesting and rare book which claims to contain the first sheets of paper made from wood fibre in the British Isles. The book was written by Matthias Koops in 1801 and is entitled: "Historical account of the substances which have been used to describe events and to convey ideas from the earliest date to the invention of Paper."

Mr. Koops, who was a practical paper maker, asserts that the book contains the first paper made from both straw and wood pulp, with no admixture of rags or other vegetable material.

"I am able to produce to the public," says the author, very strong and fine paper made from straw and wood, without any addition of any other known paper stuff, notwithstanding that I have not yet had the advantage of making it in a mill, regularly built for such a new undertaking."

One section of the book appears on an excellent make of wood pulp paper, and the section printed on straw paper is almost equally attractive. Mr. Koops claimed that he had invented a process to restore waste paper to its original condition by the extraction of the ink. As far as the Forestry Magazine is aware, no such process is today in successful operation, although inferior wrapping papers are manufactured from waste newspapers.

### THE WORLD'S FIRST INDUSTRY.

Since time immemorial, controversies have arisen as to which is the oldest industry and when such industry first came into being.

The paper industry was the first one, we assert, and existed we are led to believe even in the Garden of Eden. No doubt, the reader is dubious concerning this statement but we reaffirm our belief in it.

When all the beasts of the field, fowl of the air, fish in the sea, and every other working, creeping, flying, swimming thing was created, among that many hued, many tempered, and variously dispositioned crew, was turned loose, the wasp.

The wasp was a home lover and home builder. He was brought into being with the desire for a home and everyone ever having seen a wasp's home, knows it is made of paper—perhaps not the kind in general usage, such as we recognize 'as' paper, but nevertheless paper it is.

The fact of the matter is, every wasp is a born paper maker. It is probable that the very first day he came into being he visualized a bungalow for the future Mrs. Wasp and as all industrious people do, immediately set to work creating it. If you do not believe Wasp's homes are made of paper you are welcome to tear one down and carefully examine it. If Mr. Wasp is home, you will, no doubt, get stung—not the result of finding that the material is anything other than paper, but as retribution for breaking up the home of a happy family.

# UNITED STATES NOTES

In the latest report on business conditions made to the Federal Reserve Board by its agent at Philadelphia Federal Reserve District is summarized as follows: In the paper trade demand is reported as decreasing, while in the paper box business it is said to be more or less inactive; both branches of the industry are listed as being able to supply demand and the prices in each maintain low levels. The raw material and merchandise situation is declared to be good and transportation as it affects the paper business is said to have improved somewhat. The conditions in all branches of the Philadelphia trade show, in fact, according to the Federal Reserve synopsis, no great variance from the general situation in other industries and lines of business cited in the report.

A fire believed to have been of incendiary origin partially destroyed the plant of the F. A. Reed Company at Albion, N.Y. last Wednesday. This concern manufactures paper covers for apple barrels and paper containers for other foodstuffs. The damage wrought by the fire is estimated at \$100,000.

R. F. McElwain, president of the Crocker-McElwain Company and the Chemical Paper Manufacturing Company, Holyoke, Mass., gave out a statement last Wednesday announcing that the directors of the Crocker-McElwain Company had voted a dividend of 100 per cent. on the common stock, payable December 29.

The stockholders of the United States Envelope Company will meet on January 7 to vote on the proposal of its directors to increase the common stock from \$5,000,000 to \$8,000,000, which will bring its authorized common up to its authorized preferred. An increase in the working capital is made necessary by increased business, the company officials contend. The new stock will be retained as treasury stock, according to W. O. Day, treasurer of the company, and issued as need arises. Part of it will be used to meet the expense of additions under way in Springfield, Mass.

More than 30,000,000 acres of commercial timber now stand in the private and national forests of Washington and Oregon, according to compilations of Thornton T. Munger of the district forest service, Portland. Of the total area of standing commercial timber in both states, 15,917,000 acres are under private ownership and the remaining 15,182,000 acres are under federal control. This stand of merchantable timber represents 745,000,000,000 feet. The original forest area of both states was 48,000,000 acres, with 4,330,000 acres having been logged off and 7,500,000 acres destroyed by fire. The annual area being cut over at present is estimated at 260,000 acres.

The Society of American Foresters, foremost in forestry organization and investigation and composed entirely of practical foresters, held its annual meeting at the Yale Club, New York City, last week. The main topic of discussion was how waste products of lumber could be handled to greatest advantage, and what substitutes could be used for lumber and timber. Using more steel for construction purposes than is used at present was one proposal for lumber saving which had general support. Nearly every forestry school in the country was represented at this meeting, including

Yale, Cornell, Wisconsin, Michigan and Syracuse. R. C. Bryant, professor of Yale Forestry School, was re-elected president of the society; Paul G. Redington, district forester at San Francisco, was elected vice-president; E. H. Frothingham of the Federal Forestry Service, treasurer.

An income account of the United Paper Board Company contained in the application to list \$918,600 additional common stock showed that total sales for the three months ended August 28, last, were \$4,653,024. Gross earnings amounted to \$1,209,082, which, allowing for administration expenses and interest charges, left a balance of \$1,183,779 for dividends. The surplus for the three months was \$905,497. Current liabilities were given at \$1,134,440, against current assets of \$4,278,594.

While the paper industry of the country has been singularly free of industrial disputes during the past year, the protracted strike of the Nekoosa-Edwards Paper Company, begun some eighteen months ago, is still on and will be continued, according to John P. Burke, president of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers. This strike had the company's mills at Nekoosa and Port Edwards closed for several weeks but was regarded by the officials as ended when many of the men returned to work and the mills were re-opened admitting new men to replace the strikers who persisted in remaining out. It is these men who have not gone back who are still continuing the "strike" and Mr. Burke declares that the International Brotherhood intends to back them in their fight to the bitter end.

## NEVER MIND THE CLOCK.

Until you feel yourself a part of the organization you are not going to become an important and valued employee of your firm.  
Forbes.

You are not going to get real enjoyment out of work until you take pride in every effort of yours to bring good results for the firm.

You are not going to progress or be contented until every advancement which your firm makes arouses a feeling of pride within you the feeling that you have been an important cog in the wheel.

Don't go to your place of business feeling that it is merely another day's grind before you.

Don't start your work with a frown and a dissatisfied feeling — smile and be happy.

Don't watch the clock and think how many hours it is till you can quit.

Forget about time and get interested in what you are doing.

You will be surprised at how much more quickly the time will go when you settle down to do an honest day's work for honest wages because you are honestly glad to build up the standing of your firm.

Don't be afraid of doing too much, but buckle in and work as if the business were yours and see how much better you will feel when you get home at night.  
Houston Chronicle.



# The Markets

## CANADIAN TRADE CONDITIONS.

Toronto, Dec. 24—The general situation in the manufacturing end of the paper trade reveals the fact that for the first time this year the mills are fairly well caught up with back orders for paper and in some cases they are now able to turn their machines onto stock. This is in marked contrast to the past few months when manufacturers were driven to their wits end to meet the demands of the jobbers and consumers. Until this month mills were working on orders placed months previously but jobbers report that these are pretty well filled now, although there are still a few belated shipments coming through, orders for which were placed months ago. For the first time since the big paper boom set in jobbers find themselves with good stocks of paper on hand and both manufacturers and jobbers are now out after orders. A visit to the jobbing houses in Toronto reveals warehouses well stocked with paper of all kinds and while this is moving out fairly well in the way of small orders which are making fairly good business, nothing like the volume of trade is being done that the jobbers would like. It is recognized, however, that the present is the normally quiet period when stock-taking is engaged in. It is also the fag-end of the Christmas trade when business is naturally expected to be dull.

**NEW YEAR OUTLOOK.**—While the trade is passing through a quiet period just now there are no signs of depression and paper men are confident that there will be a revival of buying early in the new year with prices fairly well maintained, although the possibility of declining rates for paper is recognized. The falling off in the pulp market is not expected to reflect seriously on the price of paper although it will likely affect it to some extent. At the present time little buying is being indulged in by the printers who are taking in only sufficient stock to meet the demands of their trade which is none too brisk just now. They have an idea that the paper market is going to come down and will not buy on a falling market. Whether or not they are correctly prophetic the early part of the year will reveal but the wholesalers and the manufacturers do not share the timidity of the printer. There is no hesitancy on the part of the jobber to stock up and his full warehouse does not cause him any concern. He argues that buying is bound to set in again early in the year and that there will be a renewal of the prosperity witnessed during the present year. It is pointed out that the present slump in prices of many other commodities will react to the advantage of the paper trade for clothing, produce and other firms all over the country are just now, and will be for some time to come, spending large sums in advertising surplus stock and slaughter sales, which means the liberal use of paper. It is freely predicted that there is going to be a good demand for paper next year and most men in the trade express confidence that the present period of dullness is only of a temporary character.

**THE STATIONERY TRADE.**—Manufacturing stationers report an excellent year's business with a big volume of trade and prices well maintained. A big business was done with holiday goods, such as paper-

teries, and in this connection it is interesting to note that there has been a considerable expansion of trade in these lines into the outside markets, Australia and New Zealand using a considerable quantity of Canadian papeteries and other holiday goods in the stationery and some standard lines. The coming year presents possibilities of further expansion in both the home and foreign markets and the manufacturing stationers are looking forward to a continuance of their present prosperous state.

**PULPWOOD.**—It is generally acknowledged that the pulpwood situation is rather obscure and dealers say that they hardly know where they are at. It is true that American mills are just at the present staying out of the market, but it is anticipated that they will all be back again shortly with the result that the price will be maintained. Pulpwood dealers say that it is hard to figure whether or not there has been an over-production of pulpwood, but it is quite apparent that many dealers are willing to accept much more reasonable prices than they have been receiving during the past fall and summer. Prices on pulpwood were no doubt inflated by the demand for spot wood that existed during the summer and fall months, and it looks now as if quotations may go back to where they were last spring on a delivered basis of around thirty-three dollars. An eastern dealer writes that his firm are not purchasing at the present time, but the reports of any sales made gave the firm the impression that perhaps prices have fallen about five dollars per cord f. o. b. cars Quebec Central to the shipper on the most favorable freight rate. This price would, of course, be reduced by additional freight rate from more isolated points of shipment. These prices are quoted on sapped spruce and balsam pulpwood. Quite a quantity of rossed wood was made this fall, and quite a few lumbermen anticipate putting their logs into pulpwood this winter, but it is likely that they will be discouraged on account of the present low market. It is believed that there is sufficient pulpwood for the 1921 requirements and for this year some of the dealers are discouraging further manufacture of either rossed or rough pulpwood for the market, and encouraging shippers to concentrate on making sapped pulpwood in the spring of next year for the 1922 market.

**RAG AND PAPER STOCKS.**—New cotton rags showed a further decline this week. Some grades are practically unsaleable and consignees who are buying at present are doing so solely against immediate requirements. Fancy shirt cuttings were a good deal lower in price and the market all round showed very little sign of action. Trade in old cotton rags failed to broaden last week. If anything, demand from consuming quarters was narrower than has been the case for several weeks past. Most mills were engaged in compiling inventory and making repairs and few of them are evincing any interest in raw materials. Dealers are finding it extremely difficult to secure orders for any grade of rags, waste paper or other paper-making goods. Prices on old rags held at around the same level as last week. Values are only nominal, there not being enough business in any one grade to establish a firm

market and buyers in many instances are able to pick up lots at concessions. On the other hand, many holders are firm and refuse to let go of rags except at asking figures. Buyers of waste papers are keeping out of view in accordance with the same policy they have been holding for some time. One of the local dealers, after visiting several of the Ontario paper mills, feels a little more optimistic as to conditions after the first of the year. The manufacturers seem to feel that there will be a fair market in January, although this feeling is not shared by a good many of the larger dealers. There still continues to be some trading in higher grades but mixed and newspapers are very dull and all sales are made on a buyer's market. The prices appended are merely representative of packers' quotations and should be so viewed:

	Per Cwt. F.O.B. Toronto
No. 1 shirt cuttings . . . . .	\$18.00—\$19.00
No. 1 unbleached cotton cuttings . . . . .	13.00— 14.00
No. 1 fancy shirt cuttings . . . . .	9.00— 10.00
No. 1 blue overall cuttings . . . . .	8.00— 9.00
Bleached shoe clip . . . . .	11.00— 12.00
White cotton hosiery cuttings . . . . .	14.00— 15.00
Light colored hosiery cuttings . . . . .	11.00— 12.50
New light flannellette cuttings . . . . .	13.00— 14.00
No. 2 white shirt cuttings . . . . .	10.00— 10.50
City thirds and blues (repacked) . . . . .	1.90— 2.00
Flocks and satinettes . . . . .	1.00— 1.10
Tailor rags . . . . .	.80— .90
Gunny bagging . . . . .	1.20— 1.30
Manila rope . . . . .	4.80— 5.00
No. 1 white envelope cuttings . . . . .	7.00— 7.50
No. 1 soft white shavings . . . . .	7.00— 7.25
White blanks . . . . .	3.50— 3.75
Heavy ledger stock . . . . .	3.50— 3.75
No. 1 magazine . . . . .	1.90— 2.00
No. 1 book stock . . . . .	1.75— 1.80
No. 1 manila cuttings . . . . .	3.50— 2.00
No. 1 print manila . . . . .	.75— 1.00
Folded news . . . . .	.80— .85
Over issue, news . . . . .	1.30— 1.40
Kraft . . . . .	3.00— 3.25
No. 1 clean and mixed papers . . . . .	.30— .40

### NEW YORK MARKETS.

New York, December 24—(Special Correspondence)—The market for paper in the States has ruled exceedingly quiet during the current week. Matters as regards important business, in fact, have been practically at a standstill. This is the period of the year when activity in all lines of trade slows up, and this year this condition in the paper industry is more accentuated than the ordinarily owing to the dullness prevailing for some time past, to the stringent money situation and to other factors attending the readjustment of paper prices that has been going, on recently. The one thought uppermost in the minds of paper manufacturers, jobbers and consumers today is to reduce stocks, so that their inventory sheets at the end of the year will show as clean a slate as possible. The consequence is that very little buying is being done in any quarter. Every one is holding off in placing orders excepting for small amounts of paper required to fill routine wants, and the market as a whole reflects this condition by displaying greater quietness than has been evident in a long time.

Report from mill centres are generally to the effect that manufacturers have closed their plants for the

two last weeks of the year. Most of them have awaited for quite a while an opportunity to make much-needed repairs to machinery, and have accepted the final fortnight of the year as a splendid period in which to do this work. Then, too, inventories are being compiled, and mills usually shut down for this season unless they happen to be exceptionally busy.

In the local jobbing trade business has come virtually to a halt. Printers and other consumers are doing little or no buying and the total volume of paper moved this week has been doubtless smaller than for any similar length of time in a year or more. Under the circumstances, changes in market prices and conditions are few and far between, for in the absence of trading there has been scant opportunity for such changes. To use a stereotyped phrase, the trade here is simply "marking time" waiting for the turn of the year when it is confidently expected the market will also turn for the better.

Reports have been received of sales of imported newsprint paper on the spot here down to 6 cents per pound ex the dock. Verification of this has not been obtained, but it is stated on high authority that some importers, being pressed for money and therefore obliged to convert their stocks of merchandise into cash, have disposed of some newsprint at this low price. Importers assert, however, that print paper sold at this basis represents a financial loss to the importer, as it is maintained newsprint cannot be brought in from Europe to sell at 6 cents with a profit for the importer. The domestic market for newsprint remains unchanged. Publishers are reported arranging contracts for next year's supplies and are meeting the prices quoted by manufacturers and agents without seeming reluctance. Quotations on spot newsprint to transient buyers hold at an average basis of 7.50 cents a pound at mills. While the contract basis for the first quarter of 1921 ranges around 6.50 cents f.o.b. mills for standard news in rolls.

There is little new to report in the book paper situation. Prices are holding at the levels last noted and demand from the so-called small trade has dropped off quite a bit, which is customary during the holiday season. Machine-finished book for spot delivery is quoted at 12 cents upward per pound at mills, while the contract basis is steady at 9.50 to 10 cents. Wrappings and tissues have enjoyed a fairly good pre-holiday demand and quotations are unaltered. Fine papers are in an unchanged market position, though most mills making this class of paper are filling current orders from stock and are closed down for repairs and inventory.

The board market is quiet and quotations continue at about \$45 a ton f.o.b. mills for plain chip and \$50 for filled news board. Indications point to an early revival of demand for board after New Year's. It is believed stocks held by boxmakers are low and that they will be obliged to come into the market to replenish supplies, and it is also felt that the present level of board prices should attract rather than scare off buyers.

GROUND WOOD—Mechanical wood pulp is in a very dull market position. Few consuming mills are buying at present for prompt shipment or for forward delivery, and in the absence of actual transactions it is difficult to ascertain what definite market values are. Around \$100 per ton, or a little lower, is the basis of quotations on domestic ground wood of prime quality for quick



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shipment, and yet rumors are heard of some producers letting go of limited tonnages at substantial reductions from this price. Imported ground wood is quoted at \$80 to \$85 a ton on the dock and is meeting with but slight demand.

**CHEMICAL PULP.**—Trade in chemical wood pulp is held in abeyance pending a resumption of buying by paper manufacturers, which dealers look for soon after the turn of the year. About the only activity now apparent involves the delivery of pulp on contract, as the average paper mill is using only limited quantities at present and therefore has its requirements covered by stock on hand or pulp being received on contract. Prices are mostly nominal though quotations have undergone no further recession. News grade sulphite is reported to have sold down to \$110 per ton but a more representative market quotation is in the neighborhood of \$115, with some producers asking up to \$120. Kraft is easy and can be bought in some quarters at recessions from the figures asked by sellers.

Imports of wood pulp at the port of New York this week included 4,005 bales from Gothenburg, 5,000 bales from Helsingfors, 1,200 bales from Christiana, 112 bales from Haaburg, and 400 bales from Skutskar.

**RAGS.**—To say that the papermaking rag market is quiet is putting it mildly. Business at best is close to a standstill, there being little or no demand from consuming sources, papermakers evincing a lack of interest in offerings irrespective of the prices asked. A majority of dealers and packers are holding aloof and are not pressing mills to buy, having presumably come to a conclusion that it is next to impossible to secure orders under prevailing circumstances, yet the fact remains that rags can be acquired in certain corners of the trade at sharp reductions in prices from those named by sellers as asking figures. Roofing rags are freely available at a cent per pound at shipping points for No. 1 packing, repacked old thirds and blues at 3 cents, No. 1 old repacked whites at 9 to 11 cents, depending on grade, and black cotton stockings at 2.75 cents. News cuttings are on the downtrend, with offers of No. 1 white shirt cuttings at 20 cents a pound and less noted, and other grades at proportionate reductions.

**PAPER STOCK.** Only a slight movement of waste papers into consuming channels is current, board and paper mills buying in strictly routine fashion against actual and immediate requirements. There are some manufacturers expressing willingness to place orders for large tonnage at prevailing prices but packers are said to be refusing to enter into future commitments at present low figures, reflecting their belief that

values cannot remain at such levels for long. Shavings have declined considerably this week. No. 1 hard white shavings are now reported available at 6.50 cents a pound at shipping points, and lower, while soft white shavings are offered out at 5.50 cents with few buyers in sight. Folded newspapers hold at around 65 cents per hundred pounds and No. 1 mixed papers at 35 to 40 cents. White news cuttings are moving in more or less consistent fashion at 3.50 cents a pound and overissue newspapers are finding buyers at around 1.25 cents at shipping points.

**OLD ROPE AND BAGGING.**—Paper mills evince scant interest in old rope and bagging and prices on these materials are soft and tending downward. The market is practically bare of orders, so that it is hard to say at what figures purchases could be effected. No. 1 Manila rope is quoted at 4.50 to 5 cents per pound at shipping points and No. 1 scrap bagging at 2 cents, or a trifle lower.

### THE LABOR QUESTION.

"I have no patience with the phrase 'the labor question' or 'the labor problem', as if it were some unsolved riddle of the Sphinx, hopeless of solution. My first experience as an employer of labor came when I entered the Department and found myself in charge of the navy yards and shore stations. I found nothing terrifying in the task, because I believed the men in the navy yards at the bench and the men in charge at Washington at their desks were, after all, the same kind of American citizen, and that all that was needed was frankness and justice and square dealing on both sides to insure perfect harmony and co-operation between them.

I think there has been no other employer of labor in the country with anything like the same number of employees to be considered who can point to a more constant and uninterrupted period of friendship and sympathetic relationship than can the navy with its civilian workmen. The employer who insists on having his own way, right or wrong, who tries only to get the most service for the least money will always find a 'labor problem' on his hands, but the man who tries to be fair can look, as I look, with considerable amazement upon those who hold that employer and employe must necessarily stand in a state of constant conflict and perpetual misunderstanding."

Written for the Spanish River News by

FRANKLIN D. ROOSEVELT,

Former Assistant Secretary of the U. S. Navy, now candidate for Vice-President of the U. S. on the Democratic ticket.

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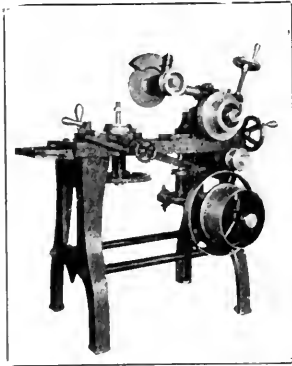
### OUR ADVERTISERS' COLUMN. THE KOEGEL GRINDER.

Gibbs-Brower Company, 261 Broadway, New York City are sole selling agents for the "Koegel" Patent Universal Slitter and Circular Knife Grinder.

With this machine, which is said to be the only one of its kind on the market, "slitters" both top and bottom can be sharpened and put into good shape in a very short time. This grinder will sharpen any and all kinds of makes of either top or bottom slitters quickly and efficiently. It can also be used for sharpening circular saws and other objects and will answer the purpose of the ordinary bench grinder. There are universal feeds on this grinder such as up and down, forward and back and cross feed, also a swivel arrangement so as to accommodate any style or shape of slitter on the spindle.

This grinder is built very solid and can be used severely without injury to any of the working parts. The material and workmanship is of the best.

This machine is not complicated and there is nothing to get out of order. No countershaft is required as there is a tight and loose pulley. The Koegel Company furnish the machines all complete including emery wheel, emery wheel guard, belt idler, grinder posts, wrenches and all belts with the exception of the main driving belt. It is said that for any firm using slitters



this machine would pay for itself in a short time. The Koegel Company guarantee these machines to be as represented, to prove entirely satisfactory in every respect, and will send them to any responsible parties on approval.

This knife grinder is already in use in many representative Canadian mills, including:—Spanish River Pulp and Paper Mills, E. B. Eddy Company, Kinleith Paper Co., Laurentide Paper Co., The Hinde and Dauch Paper Co., The Ontario Paper Co., Donnacona Paper Company, Lincoln Paper Mills, St. Lawrence Paper Mills, Abitibi Pulp and Paper Co., Garden City Paper Mills Co., Howard Smith Paper Mills, Anglo-Newfoundland Development Company, Bathurst Lumber Company, St. Maurice Paper Company, Pacific Mills, Mattagami Pulp and Paper Co., and many others.

The Gibbs-Brower Company are also sole agents for the product of the Specialty Automatic Machine Company of Chelsea, Mass., manufacturers of automatic folding and gluing machines for folding box factories, automatic envelope machinery, etc. They operate a paper and pulp mill brokerage business which they are successfully carrying on in the States, and which they hope to extend into Canada.

### TRAIN LOADS OF WOOD FROM COCHRANE COUNTRY.

The Abitibi Power and Paper Co. at Iroquois Falls, on the Temiskaming and Northern Ontario Railway, was the first mill established near Cochrane and has now the distinction of being the largest individual mill on the Continent, and probably in the world, with an annual output of 65,000 tons of paper, 20,000 tons of sulphite pulp, and 25,000 tons of ground wood pulp.

The Mattagami Pulp and Paper Co. at Smooth Rock Falls, on the Canadian National Railway, is in operation since the past three years, with a capacity of 45,000 tons of sulphite pulp.

A new concern, the Spruce Falls Pulp Co. at Kapuskasing, also on the Canadian National Railways, has just started the erection of a new plant which is designed to be of capacity of 100 tons of sulphite pulp per day and rushed to completion, and in the beginning will be operated by steam power until the power plant at Spruce Falls, on the Kapuskasing river, has been completed.

The Beaver Abitibi Timber Co., a subsidiary company to the Beaver Board Co., with offices at Cochrane, have a large rossing plant at Frederiekhouse, six miles west of Cochrane, where 30,000 cords of pulp-wood are rossed during the year, which is being shipped to the plant at Thorold. The company have their own limits to cut from.

The Calder Pulp and Paper Co., with offices at Cochrane, have a rossing mill at Burt, twenty miles west of Cochrane, and are shipping the rossed pulp wood from there.

The Northern Ontario Colonization Co. at Jacksonboro, have a barking mill in connection with their sawmill, and handle large quantities of barked pulp wood.

The two latter companies are purchasing large quantities of pulp wood from settlers along all points on the Canadian National Railways, besides which there are local buyers resident in Cochrane who purchase extensively from settlers and ship the pulp wood out in the rough.

In all, the quantities of pulp wood, outside of what is cut by the mills on their own limits, originating during the past season on Canadian National Railway points west of Cochrane, amounted to about 4,000 carloads, or over 60,000 cords, and east of Cochrane, as far as Auos, to about 2,500 carloads, or nearly 40,000 cords.—Cochrane Northland Post.

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Each family possesses a few sheets of this paper, on which its chronicles and traditions are recorded, and the same paper is used in transcribing the laws of Mohammedanism. The paper is said to have been invented in the middle of the ninth century by a Mohammedan shipwrecked on the coast, who desired to transcribe his torn and water-soaked copy of the Koran in an enduring form. The Antaimoro will only make the paper for sale when some pressing necessity arises.

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